

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 175

TRIANGULATION AND SPIRIT LEVELING IN
INDIAN TERRITORY.—FITCH

WASHINGTON
GOVERNMENT PRINTING OFFICE
1900

UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

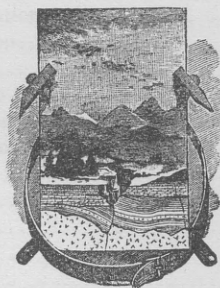
TRIANGULATION AND SPIRIT LEVELING

IN

INDIAN TERRITORY

BY

C. H. FITCH



WASHINGTON

GOVERNMENT PRINTING OFFICE

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 6, 1900.

SIR: I have the honor to transmit herewith, for publication as a bulletin, the results of the primary triangulation and the leveling executed in Indian Territory from 1895 to 1898, inclusive.

Very respectfully,

C. H. FITCH, *Topographer.*

HON. CHARLES D. WALCOTT,
Director United States Geological Survey.

TRIANGULATION AND SPIRIT LEVELING IN INDIAN TERRITORY.

By C. H. FITCH.

INTRODUCTION.

An act of Congress, approved March 2, 1895, appropriated \$200,000 for the survey and subdivision of lands in Indian Territory, and the work was placed, at the discretion of the Secretary of the Interior, in charge of the Director of the Geological Survey.

A plan of operations was approved by the Secretary of the Interior March 21, 1895, Mr. C. H. Fitch was placed in immediate charge of the field work, and preparations were at once made for beginning operations. The requisite instruments, animals, and equipment were soon purchased and a small force took the field about the 1st of April. The force was increased as rapidly as consistent with economic management until about 300 men were engaged in the work of surveying standard, township, and subdivision lines.

The approved plan included the preparation of a topographic map of the area surveyed, which necessitated the execution of a system of triangulation and the running of spirit-level lines, thus affording horizontal and vertical control for the topographic map as well as the linear measurements.

The first parties organized were for the establishment of standard and township exterior lines. Subdivision parties were next organized, each party being divided into two camps with two surveyors in each camp, under the direction of a topographer of the survey whose duties included superintendence of the work of subdivision by the surveyors and the mapping the country subdivided.

An additional appropriation of \$200,000 was provided by Congress June 10, 1896, also of \$100,000 June 6, 1897, and \$30,000 January 28, 1898. The latter amount would probably not have been necessary had the survey progressed without interruption, but the disbanding of the field parties in the spring of 1897, caused by the delay in the provision of funds and the long moves of the parties in the reorganization, added considerably to the expense. A resurvey of the lands of

the Chickasaw Nation was provided for in the act approved June 6, 1897, which appropriated \$141,500 for this purpose.

The total amount appropriated for surveys in Indian Territory, which included the lands of the Cherokees, Creeks, Choctaws, and Seminoles, was \$530,000, which added to the amount provided for the resurvey of the Chickasaw lands amounts to \$671,500.

The total number of miles of standard, township, and subdivision lines surveyed, from the inception of the work to its completion in June, 1898, was 63,881. The topographic mapping completed at the same time covered an area of 30,885 square miles; in connection with which 133 triangulation stations were established, 9,303 miles of spirit level and 8,594 miles of vertical angles were run, and 920 permanent bench marks were located.

TRIANGULATION.

The base for the triangulation was measured in April, 1895, on the railroad tangent which passes through Savanna, a station on the Missouri, Kansas and Texas Railway, the northern end of the base being about three-fourths of a mile north from Savanna station and 7 miles south from South McAlester. This base was measured twice with a 300-foot steel tape under a tension of 20 pounds, and the temperature of tape determined at each tape length by reading three thermometers. The difference of the two measures (when corrected for difference in temperature) was 0.03 feet.

The resulting length of base, when corrected for temperature, inclination, and reduced to sea level, is 24,893.451 feet, log. meters = 3.8800962.

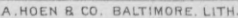
Stations in the expansion were selected on the wooded ridges to the eastward and signals from 25 to 40 feet high erected. The lines between these stations formed bases for the main triangulation, which in 1895 was extended 45 miles southward and 110 miles northward from the base. The triangulation south of Savanna was executed by Mr. S. S. Gannett in May and June, 1895, the triangulation north of Savanna to the Kansas line by Mr. C. F. Urquhart during 1895, 1896, and 1897.

Mr. Urquhart also extended triangulation over the Chickasaw Nation between February and June, 1898. Mr. H. L. Baldwin, jr., controlled the eastern portion of the Choctaw Nation in 1897. Triangulation was extended into Grayson County, Texas, by Mr. Jeremiah Ahern during the latter part of the season of 1898.

The total number of stations occupied by the various observers was 133, the greater number being occupied by Mr. Urquhart.

The instruments used were Fauth theodolites, each having a circle 8 inches in diameter and reading by micrometer microscopes to 2" of arc.

In most cases the theodolite was elevated from 25 to 60 feet, in order



to see above the timber. An interior tripod, made of 2 by 4 inch scantling, well braced, was first erected; outside of this, and entirely independent of it, a four-sided platform was built for the observer to stand on and also to support the signal, which was above center of tripod.

The total area controlled is about 31,000 square miles.

The geodetic coordinates of all stations were first computed from Savanna astronomic station, using the observed azimuth taken at north base.

Check azimuth observations were made at stations Barber, Harman, Purcell, and Good.

After connections with other astronomic positions had been made, as mentioned below, a mean value dependent upon all four was adopted and a constant correction of $+1.08''$ in latitude and $+10.72''$ in longitude was applied to all positions previously computed.

In 1896-97 connection was made with Poteau, Cavanal, Peak, and Sugarloaf, stations of the Arkansas triangulation of 1887, whose positions depend upon a mean value adopted from Fort Smith and Little Rock astronomic stations of the United States Coast and Geodetic Survey.

In 1899, Marlow, the extreme western triangulation station in the Chickasaw Nation, was connected by primary traverse with the astronomic station of the United States Coast and Geodetic Survey at Marlow railroad station.

In December, 1899, Wasson triangulation station, in the northern portion of the Cherokee Nation, was connected by primary traverse with the astronomic station located in 1884 by Prof. R. S. Woodward, United States Geological Survey, at Oswego, Kansas.

Comparisons of positions computed from Savanna with other astronomic locations:

	Latitude difference.	Longitude difference.
	<i>Feet.</i>	<i>Feet.</i>
Savanna	+ 0	+ 0
Marlow	+ 201	1, 143
Fort Smith and Little Rock	- 267	1, 149
Oswego	+ 503	821
	+ 109	+ 778
		+ 1 117
Total		+ 895
Correction	+1. 08	+10. 72

¹ Longitude increase by Coast and Geodetic Survey adjustment published 1897.

Incidentally to the connection between Wasson triangulation station and Oswego the latitude of the Kansas-Indian Territory boundary line was determined by Mr. E. M. Douglas, in December, 1899, from Oswego, the value $37^{\circ} 00' 04.18''$ being 422 feet north of the parallel of 37° .

DESCRIPTIONS AND POSITIONS OF STATIONS.

SAVANNA, CHOCTAW NATION (Astronomic station).

Situated on high ground about 300 yards northeast of railroad station at Savanna. The pier is made of brick laid in cement, with its base on solid rock.

Observations for latitude and longitude were made with the Fauth combined transit and zenith telescope, No. 534.

The latitude was determined by Talcott's method, and the Washington Observatory at St. Louis was used as the initial or base station for the longitude determination. The observer at St. Louis was Mr. A. Ramel and at Savanna Mr. S. S. Gannett, the relative personal equation of the observers being determined on two nights in April, 1895, preceding the longitude observations proper, the result showing that Ramel observed later than Gannett $0.075'' \pm 0.024''$.

The difference of longitude was determined on five nights, the mean being $22' 32.179'' \pm 0.017''$.

The resulting longitude west of Greenwich is in arc

$$\begin{array}{r} 95^{\circ} \quad 50' \quad 21.33'' \text{ observed.} \\ \quad \quad \quad +10.72 \\ \hline \end{array}$$

$$95 \quad 50 \quad 32.05 \text{ geodetic mean.}$$

The mean of 37 results for latitude is

$$\begin{array}{r} 34^{\circ} \quad 48' \quad 46.49'' \pm 0.18'' \text{ observed.} \\ \quad \quad \quad + 1.08 \\ \hline \end{array}$$

$$34 \quad 49 \quad 47.57 \quad \text{geodetic mean.}$$

North base station was occupied upon one night as an azimuth station, the mark being placed at South base.

SAVANNA NORTH BASE, CHOCTAW NATION.

About three-fourths mile northeast of Savanna railroad station, 60 feet west from and at right angles to west rail of Missouri, Kansas and Texas Railway track, in open country. Theodolite elevated 24 feet.

Station mark: A stone post 36 by 6 by 6 inches, set 30 inches in the ground. Center of station marked by cross cut in the rock.

Reference stones are set to the east, west, and north. Distances from center of station to nearest corners of stones, E. 9.87 feet, W. 10.06 feet, N. 9.64 feet, respectively.

[Latitude, 34° 50' 22.84". Longitude, 95° 50' 12.18".]

To station.	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
South base.....	33 43 24.62	213 41 50.02	3.8800962
Johnstown	50 31 31.40	230 30 23.28	3.5940794
Lost.....	239 54 57.65	59 57 1.39	3.8031660
Hickory	350 44 14.27	170 44 43.88	3.9136236

SAVANNA SOUTH BASE, CHOCTAW NATION.

On a flat summit 4 miles south-southwest of Savanna station; about 3,000 feet south from end of tangent and on line with its prolongation. Theodolite elevated 24 feet.

Station mark: A stone post, 36 by 6 by 6 inches, set 30 inches in the ground. Center of station marked by x cut in the rock.

Reference stones are set to the east, west, and south. Distances from center of station to nearest corners of stones, E. 9.69 feet, W. 10.01 feet, S. 9.49 feet.

[Latitude, 34° 46' 58.02". Longitude, 95° 52' 57.86".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Pine	10 44 37.45	190 43 26.55	4.2306990
Johnstown	197 10 45.03	17 11 11.51	3.6012690
Lost.....	225 36 58.22	45 40 36.52	4.1330090
Hickory	287 47 59.87	107 49 63.96	3.7642305

JOHNSTOWN, CHOCTAW NATION.

On the wooded ridge about 1½ miles southwest of Savanna. Theodolite elevated 30 feet on the trunk of a tree.

Station mark: A pile of rocks around foot of tall tree trunk, which formed support for instrument. Adjacent trees have side facing center of station, blazed.

[Latitude, 34° 49' 01.81". Longitude, 95° 52' 11.46".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Pine	11 58 23.55	191 56 46.25	4.3218489
South base.....	17 11 11.51	197 10 45.03	3.6012690
Dalton	77 20 17.06	257 11 45.82	4.3683730
Whaleback	108 59 36.48	288 56 06.78	3.9941268
North base.....	230 30 23.28	50 31 31.40	3.5940794
Lost.....	236 18 46.96	56 21 58.86	4.0107371
Hickory	322 06 06.26	142 07 43.97	3.8503912

HICKORY, CHOCTAW NATION.

About 4 miles (air line) southeast of Savanna; on a prominent wooded butte. From north boundary of T. 3 N., R. 14 E., at point 30.82 chains east on line between secs. 3 and 34, station bears S. 6° W., 6.04 chains distant. Theodolite elevated 30 feet.

Station mark: A rock marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$

[Latitude, 34° 46' 00.32". Longitude, 95° 49' 20.30%.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Pine	30 15 56.50	210 12 41.79	4.2377005
Dalton	91 01 25.80	270 51 17.21	4.4336560
South base.....	107 50 03.96	287 47 59.87	3.7642305
Whaleback	122 47 02.83	302 41 55.55	4.2113390
Johnstown	142 07 43.97	322 06 06.26	3.8503912
North base.....	170 44 43.88	350 44 14.27	3.9136236
Lost.....	200 20 59.84	20 22 33.85	4.0801000

LOST, CHOCTAW NATION.

On a flat, heavily timbered ridge, about 2 miles east of the Missouri, Kansas and Texas Railway and 4 miles south of South McAlester. A wagon road was cut through the woods, approaching from the gap in the ridge 1 mile south of summit. Theodolite elevated 40 feet.

Station mark: A stone post, 36 by 6 by 6 inches, set 30 inches in the ground, marked thus: U. ΔS.

[Latitude, 34° 52' 06.18". Longitude, 95° 46' 35.65%.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hickory	20 22 33.85	200 20 59.84	4.0801000
Pine	26 13 33.39	206 08 44.55	4.4654650
South base.....	45 40 36.52	225 36 58.22	4.1330090
Johnstown	56 21 58.86	236 18 46.96	4.0107371
North base.....	59 57 01.39	239 54 57.65	3.8031660
Dalton	71 01 02.83	250 49 19.44	4.5201800
Whaleback	82 09 51.07	262 03 09.28	4.2559538
Scipio	152 39 24.59	332 33 47.99	4.5098914
Gaines	215 48 19.74	35 55 03.63	4.4843524
Hewitt	350 55 01.87	170 56 43.85	4.4605759

WHALEBACK, CHOCTAW NATION.

On a long, flat ridge, 8 miles west-northwest of Savanna, about 13 miles southwest of South McAlester. Summit is clear of timber at northern end, but is heavily timbered at southern end. Theodolite elevated 20 feet.

Station mark: A stone post, 26 by 7 by 7 inches, sunk 24 inches in the ground; marked U. Δ S.

[Latitude, $34^{\circ} 50' 45.85''$. Longitude, $95^{\circ} 58' 18.64''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Dalton	58 11 07.56	238 06 05.66	4.1994140
Shawnee	123 22 21.34	303 17 09.95	4.2187031
Scipio	183 22 55.57	5 24 02.14	4.4960782
Lost	262 03 09.28	82 09 51.07	4.2559538
Johnstown	288 56 06.78	108 59 36.48	3.9941268
Hickory	302 41 55.55	122 47 02.83	4.2113390
Hewitt	319 10 56.92	139 19 19.36	4.5362443
Pine	348 06 10.04	168 08 01.89	4.3847552

PINE, CHOCTAW NATION.

On the highest part of a long pine-timbered ridge, about 5 miles south of Kiowa. It can best be reached by taking the road from Kiowa to King's sawmill, and where it crosses top of mountain turn south, following the crest about $1\frac{1}{2}$ miles through the woods to the station. Theodolite elevated 50 feet.

Station mark: A hole drilled in the solid rock; marked U. S. G. S.

[Latitude, $34^{\circ} 37' 55.69''$. Longitude, $95^{\circ} 55' 02.35''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Bald	32 45 12.42	212 39 21.00	4.4664448
Indian	52 27 18.16	232 20 14.18	4.3810514
Giant	59 14 40.63	239 02 07.68	4.5960108
Sulser	101 39 21.12	281 24 04.68	4.6218176
Ninas	113 01 14.45	292 50 32.85	4.4935900
Dalton	129 51 37.94	309 44 45.08	4.3806474
Whaleback	168 08 01.89	348 06 10.04	4.3847552
South base	190 43 26.55	10 44 37.45	4.2306990
Johnstown	191 56 46.25	11 58 23.55	4.3218489
Lost	206 08 44.55	26 13 33.39	4.4654650
Hickory	210 12 41.74	30 15 56.50	4.2377005

DALTON, CHOCTAW NATION.

On the highest part of a timbered ridge, about 1 mile north of McAlester's pasture and $1\frac{1}{2}$ miles northeast of a settlement known as Caney Valley. The corner common to secs. 34, 35, 3, and 2, Ts. 3 and 4 N., R. 11 E., may be reached from the station by going due south 18.44 chains, thence S. $82^{\circ} 30'$, W. 32.67 chains. (To change bearings to magnetic declinations add $8^{\circ} 47'$ to each.) Theodolite elevated 30 feet.

Station mark: Rock marked U. S. G. S.

[Latitude, $34^{\circ} 46' 14.77''$. Longitude, $96^{\circ} 07' 07.55''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Indian	1 04 35.71	181 04 23.13	4.4779536
Ninas	72 27 51.21	252 24 01.93	4.0305634
Shawnee	178 42 21.97	358 42 13.02	4.2417862
Whaleback	238 06 05.66	58 11 07.56	4.1994140
Lost.....	250 49 19.44	71 01 02.83	4.5201800
Johnstown	257 11 45.82	77 20 17.06	4.3683730
Hickory.....	270 51 17.21	91 01 25.80	4.4336560
Pine	309 44 45.08	129 51 37.94	4.3806474

HEWITT, CHOCTAW NATION.

On a prominent mountain locally known as Bald Mountain, 22 miles by road southwest of Hartshorne and the same distance northeast of Stringtown; 17 miles southeast of Kiowa, at the northeast end of McGee's prairie. The summit is well covered with black jack and pine. The station is situated on highest part, and timber west and northwest of it was cut down.

Station mark: Blazed pine tree.

[Latitude, $34^{\circ} 36' 40.72''$. Longitude, $95^{\circ} 43' 36.72''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Pine	97 35 11.74	277 28 42.20	4.2459604
Whaleback	139 19 19.36	319 10 56.92	4.5362443
Hickory	153 08 03.82	333 04 48.28	4.2863359
Lost.....	170 56 43.85	350 55 01.87	4.4605759
Hartshorne	215 09 04.93	35 14 24.67	4.3944219
Dexter	271 58 10.85	92 08 49.08	4.4571430
Kosoma	336 43 52.60	156 47 34.00	4.4025800

NINAS, CHOCTAW NATION.

On a timbered ridge, about 2 miles north of South McAlester-Stonewall road, at a point 25 miles from South McAlester, about 3 miles northwest from Mr. Ninas's house. The station may be reached from the corner common to secs. 10, 11, 14, and 15, T. 3 N., R. 10 E., by going N. $0^{\circ} 2' W.$ 20 chains, thence S. $76^{\circ} 15' E.$ 3.57 chains. Theodolite elevated 40 feet.

U. S.
Station mark: A rock marked +
G. S.

[Latitude, $34^{\circ} 44' 29.70''$ Longitude, $96^{\circ} 13' 49.72''$]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Sulser	72 59 14.49	252 54 38.97	4.1096480
Gully (approximate)	131 19 27.50	311 15 29.50	4.14981
Hawkins	142 58 06.97	322 51 47.81	4.4466067
Shawnee	205 22 34.79	25 26 16.86	4.3598037
Dalton	252 24 01.93	72 27 51.21	4.0305633
Pine	292 50 32.85	113 01 14.45	4.4935900
Indian	340 07 02.27	160 10 38.18	4.4549690

SULSER, CHOCTAW NATION.

On a high timbered ridge, about 2 miles west from Coalgate-Allen road, at a point 16 miles from Coalgate. Station may be reached from the quarter corner on line between secs. 28 and 29, T. 3 N., R. 9 E., by going N. $74^{\circ} 20' E.$ 12 chains, thence N. $28^{\circ} 30' E.$ 15.18 chains, thence N. $37^{\circ} E.$ 17.34 chains. Theodolite elevated 35 feet.

U. S.
Station mark: A rock marked +
G. S.

[Latitude, $34^{\circ} 42' 27.22''$ Longitude, $96^{\circ} 21' 53.40''$]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Gully (approximate)	187 20 58.00	7 21 36.00	4.12057
Ninas	252 54 38.97	72 59 14.49	4.1096480
Pine	281 24 04.68	101 39 21.12	4.6218176
Indian	316 14 38.75	136 22 49.24	4.5032656
Giant	345 49 05.84	165 51 46.50	4.4697694

INDIAN, CHOCTAW NATION.

On the highest oak-timbered hill, about 4 miles northwest of Stringtown, 8 miles north of Atoka, 8 miles northeast of Lehigh, and 3 miles northwest of Sullivan's sawmill. Station may be reached from the closing corner between secs. 2 and 3, T. 1 S., R. 11 E., by going S. 2° E. 20 chains, thence S. $79^{\circ} 15'$ E. 7 chains, thence S. $18^{\circ} 15'$ E. 9 chains, thence S. $3^{\circ} 15'$ E. 5.19 chains. Theodolite elevated 35 feet.

Station mark: An irregularly shaped sand rock set flush with surface
 U. S.
 of ground and marked + Above this is a pile of rocks 3 feet high.
 G. S.

[Latitude, $34^{\circ} 29' 59.51''$. Longitude, $96^{\circ} 07' 29.68''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Giant	69 28 29.56	249 23 00.90	4.1993788
Sulser	136 22 49.24	316 14 38.75	4.5032656
Ninas	160 10 38.18	340 07 02.27	4.4549690
Dalton	181 04 23.13	1 04 35.71	4.4779536
Pine	232 20 14.18	52 27 18.16	4.3810514
Bald	341 55 30.88	161 56 42.87	4.0201200

GIANT, CHOCTAW NATION.

On the highest part of a large, flat, timbered ridge, 3 miles west-southwest of Lehigh. All timber has been cut down, permitting an extensive view in all directions excepting north-northeast. From the corner common to secs. 19, 20, 29, and 30, T. 1 S., R. 10 E., the station may be reached by going N. $8^{\circ} 47'$ E. 7 chains, thence N. $74^{\circ} 47'$ W. 15.59 chains.

Station mark: A post-oak tree, trimmed and standing alone.

[Latitude, $34^{\circ} 26' 59.04''$. Longitude, $96^{\circ} 17' 10.31''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Buffalo	16 34 46.23	196 32 02.36	4.4159775
Sulser	165 51 46.50	345 49 05.84	4.4697694
Pine	239 02 07.68	59 14 40.63	4.4960108
Indian	249 23 00.90	69 28 29.56	4.1993788
Bald	283 37 04.00	103 43 44.23	4.2695412
Forest	306 23 54.12	126 32 10.36	4.4459746
Sugarloaf (2)	327 44 31.13	147 53 10.47	4.6461276
Caddo	357 09 43.02	177 10 26.98	4.6067000

BALD, CHOCTAW NATION.

On a bald hill 3 miles north of Atoka, about 300 feet above and three-fourths mile east of the Missouri, Kansas and Texas Railway. From the quarter corner on line between secs. 1 and 6, T. 2 S., Rs. 11 and 12 E., station may be reached by going due north 4 chains, thence N. $6^{\circ} 15'$ E. 12.28 chains.

Station mark: A flinty sandstone post, 26 by 6 by 8 inches, set 24 inches in ground. Top of rock is marked U. Δ S.

[Latitude, $34^{\circ} 24' 36.34''$. Longitude, $96^{\circ} 05' 22.43''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Caddo	24 10 28.68	204 04 34.255	4.5957933
Giant	103 43 44.23	283 37 04.00	4.2695412
Indian	161 56 42.87	341 55 30.88	4.0201200
Pine	212 39 21.00	32 45 12.42	4.4664448
Forest	340 16 23.71	160 18 00.24	4.1125840
Sugarloaf (2)	350 34 44.75	170 36 45.32	4.5253280

FOREST, CHOCTAW NATION.

On the highest land about 10 miles southeast of Atoka in an unbroken forest, one-half mile southwest of cabin occupied by Jim Seever. From the corner common to secs. 9, 10, 15, and 16, T. 3 S., R. 12 E., station bears S. $40^{\circ} 15'$ W., 15.74 chains distant. Theodo lite elevated 60 feet.

Station mark: A rock, 39 by 6 by 8 inches, set 36 inches in the ground, marked U. Δ S.

[Latitude, $34^{\circ} 18' 00.41''$. Longitude, $96^{\circ} 02' 31.39''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Sugarloaf (2)	356 58 28.94	176 58 53.14	4.3201576
Caddo	40 49 46.98	220 42 16.94	4.4969643
Giant	125 32 10.36	306 23 54.12	4.4459746
Bald	160 18 00.24	340 16 23.71	4.1125840

BUFFALO, CHOCTAW NATION.

On high ground locally known as Buffalo Head, 10 miles west-north-west of Caddo, one-fourth mile west of the Caddo-Wapanucka road, one-eighth mile north of house occupied by Forbes Leflore. The summit is steep on north side, but slopes gently toward the south. From quarter corner on line between secs. 8 and 9, T. 4 S., R. 9 E., station bears N. $67^{\circ} 07' E.$, 25.20 chains distant. Theodolite elevated 30 feet.

Station mark: A sandstone post, 20 by 8 by 8 inches, set 15 inches in very hard, rocky ground.

[Latitude, $34^{\circ} 13' 28.36''$. Longitude, $96^{\circ} 22' 00.84''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Standard section corner..	13 28 19.33	193 26 58.11	4.2019780
Giant	196 32 02.36	16 34 46.23	4.4159775
Sugarloaf (2)	291 48 46.96	112 00 07.96	4.5246785
Caddo	328 27 28.73	148 30 55.68	4.2568325

STANDARD SECTION CORNER, CHOCTAW NATION.

On the open prairie 12 miles southwest of Caddo, on second guide meridian, 29 miles south of land office base line.

Station mark: A wooden post, 6 inches square, projecting 18 inches above ground, with 5 grooves cut on north side and 1 groove on south side; R. 8 E., and S. 25 on northwest side, R. 9 E., and S. 31 on southeast side, T. 5 S., and S. 30 on northeast side, and S. 36 on southwest side.

[Latitude, $34^{\circ} 05' 05.83''$. Longitude, $96^{\circ} 24' 25.52''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Buffalo	193 26 58.11	13 28 19.33	4.2019780
Caddo	269 35 49.89	89 40 37.54	4.1192421

CADDO, CHOCTAW NATION.

On the first hill south of Caddo, being about 3 miles south of that town and 2 miles east of Missouri, Kansas and Texas Railway. The corner common to secs. 28, 29, 32, and 33, T. 5. S., R. 10 E., may be reached from the station by going due west 14.11 chains, thence S. $0^{\circ} 02' E.$ 5.70 chains.

Station mark: A sandstone post, 20 by 8 by 8 inches, set 15 inches in the ground, marked U. Δ S.

[Latitude, $34^{\circ} 05' 08.52''$. Longitude, $96^{\circ} 15' 52.23''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Standard section corner..	89 40 37.54	269 35 49.89	4.1192421
Buffalo	148 30 55.68	328 27 28.73	4.2568325
Giant	177 10 26.98	357 09 43.02	4.6067000
Bald	204 04 34.25	24 10 28.68	4.5957933
Forest	220 42 16.94	40 49 46.98	4.4969643
White Rock	239 47 08.75	60 06 18.14	4.7813130
Sugarloaf (2).....	262 16 03.77	82 23 56.86	4.3389841

SUGARLOAF (2), CHOCTAW NATION.

On a sharp, bare peak 15 miles east of Caddo; a prominent and well-known landmark in that part of the nation. The corner common to secs. 14, 15, 22, and 23, T. 5 S., R. 12 E., may be reached from the station by going due east 25.90 chains, thence N. $0^{\circ} 01'$ W. 8.43 chains.

Station mark: A rock cairn 4 feet high.

[Latitude, $34^{\circ} 06' 43.04''$. Longitude, $96^{\circ} 01' 48.35''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Caddo	82 23 56.86	262 16 03.77	4.3389841
Buffalo	112 00 07.96	291 48 46.96	4.5246785
Giant	147 53 10.47	327 44 31.13	4.6461276
Bald	170 36 45.32	350 34 44.75	4.5253280
Forest	176 58 53.14	356 58 28.94	4.3201576
White Rock	228 12 30.30	48 23 45.33	4.6141214
Goodland	277 38 34.00	97 53 16.15	4.6098760

WHITE ROCK, CHOCTAW NATION.

A high, flat mountain about 5 miles west of the St. Louis and San Francisco Railroad and 9 miles by road northwest of Rodney. The summit is level for several miles and covered with tall pine trees. The station is located near the northwest end of the summit, about one-fourth mile northwest of head of log chute and three-fourths mile northwest of Herndon's sawmill. The quarter corner between secs. 23 and 26, T. 2 S., R. 15 E., may be reached from the station by

going due north 8.91 chains to section line, thence due west 16.70 chains. Theodolite elevated 60 feet.

Station mark: A flint rock 1 foot square on top, $3\frac{1}{2}$ feet long, and set 2 feet in the ground. Rock marked U. Δ S.

[Latitude, $34^{\circ} 21' 30.92''$. Longitude, $95^{\circ} 41' 48.46''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Sugarloaf	48 23 45.33	228 12 30.30	4.6141214
Caddo	60 06 18.14	239 47 08.75	4.7813130
Forest	78 33 36.05	258 21 55.11	4.5109320
Goodland	343 43 15.78	163 46 46.13	4.5343770

GOODLAND, CHOCTAW NATION.

On a high, flat prairie ridge owned by Tom Self, 4 miles west of Goodland and 1 mile north of road from Goodland to forks of Boggy Creek. From quarter corner between secs. 1 and 2, T. 6 S., R. 16 E., station bears S. $79^{\circ} 25' W.$, 11.68 chains distant.

Station mark: Shell rocks piled around foot of tall signal pole.

[Latitude, $34^{\circ} 03' 44.44''$. Longitude, $95^{\circ} 35' 34.34''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Sugarloaf (2)	97 53 16.15	277 38 34.00	4.6098760
White Rock	163 46 46.13	343 43 15.78	4.5343770

GULLY, CHOCTAW NATION.

A timbered hill in northwestern portion of Choctaw Nation.

The station was not occupied, but all timber was cut down in 1895, leaving a lone tree as a signal. The corner common to secs. 9, 10, 15, and 16, T. 4 N., R. 9 E., may be reached from station by going due north 97 links and due east 32.10 chains.

Station mark: Lone signal tree.

[Latitude, $34^{\circ} 49' 32.06''$. Longitude, $96^{\circ} 20' 46.96''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Sulser	7 21 36	187 20 58	4.12057
Ninas	311 15 30	131 19 28	4.14981

SHAWNEE, CHOCTAW NATION.

On a high timbered point about 3 miles north from where Choctaw, Oklahoma and Gulf Railroad crosses Coal Creek. The corner common to secs. 2, 3, 10, and 11, T. 5 N., R. 11 E., may be reached from station by going S. $43^{\circ} 43' W.$ 3.79½ chains. Theodolite elevated 36 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $34^{\circ} 55' 40.88''$. Longitude, $96^{\circ} 07' 23.07''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Dalton	358 42 13.02	178 42 21.97	4.2417852
Ninas	25 26 16.86	205 22 34.79	4.3598040
Hawkins	93 34 21.35	273 24 19.90	4.4265922
Bruner	126 10 31.06	306 02 01.66	4.4451958
Blanket	180 59 59.13	1 00 09.04	4.3988600
Scipio	217 05 12.59	37 11 31.71	4.4430075
Lost	281 42 00.50	101 53 54.14	4.5099472
Whaleback	303 17 09.95	123 22 21.34	4.2187031

HAWKINS, CREEK NATION.

On a timbered ridge about 5 miles north of Allen, about 1 mile north of Canadian River, and 1 mile west from Mr. Hawkins's residence. Station is 4.2 chains north of town line between Ts. 5 and 6 N., R. 8 E., and 37.5 chains east of line between secs. 35 and 36. Theodolite elevated 65 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $34^{\circ} 56' 33.63''$. Longitude, $96^{\circ} 24' 53.39''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Wewoka	165 19 14.59	345 15 32.26	4.5860074
Bruner	195 31 05.57	15 32 38.63	4.1864090
Shawnee	273 24 19.90	93 34 21.35	4.4265922
Ninas	322 51 47.81	142 58 06.97	4.4466067

BRUNER, CREEK NATION.

On a timbered ridge about 2 miles east from Holden, a small town on Choctaw, Oklahoma and Gulf Railroad, and three-fourths mile north of Berry Bruner's residence. The corner common to secs. 16, 17, 20, and 21, T. 7 N., R. 9 E., may be reached from station by going due west 1.95 chains, thence due south 20.05 chains. Theodolite elevated 50 feet.

Station mark: Rock marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$

[Latitude, 35° 04' 33.89". Longitude, 96° 22' 11.17".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hawkins	15 32 38.63	195 31 05.57	4.1864090
Wewoka	148 20 51.31	328 15 35.18	4.4220464
Blanket	249 18 47.67	69 27 28.44	4.3890809

BLANKET, CREEK NATION.

On a timbered ridge about 13 miles southwest from Proctor and about 1 mile south from Allen-Eufaula road at point where road enters the hills going southwest. The corner common to secs. 22, 23, 26, and 27, T. 8 N., R. 11 E., may be reached from station by going due west 22.70 chains, thence due south 47.96 chains. Theodolite elevated 38 feet.

Station mark: Rock marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$

[Latitude, 35° 09' 13.74". Longitude, 96° 07' 05.80".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Bruner	69 27 28.44	249 18 47.67	4.3890809
Wewoka	110 46 03.01	290 32 04.48	4.5944177
Bean	169 46 42.33	349 44 31.44	4.5078207
Rentie	194 21 08.03	14 24 34.36	4.5600038
Tiger	233 37 59.83	53 46 48.92	4.4590231
Scipio	280 11 06.93	100 17 17.19	4.2187340
Shawnee	1 00 09.04	180 59 59.13	4.3988600

SCIPIO, CHOCTAW NATION.

On a prominent wooded butte on south side of Canadian River just west of the mouth of Scipio Creek. It is best approached from the southeast side. The quarter corner on line between secs. 33 and 34, T. 8 N., R. 13 E., may be reached from station by going due east 45.25 chains, thence due south 19.15 chains.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $35^{\circ} 07' 38.31''$. Longitude, $95^{\circ} 56' 22.54''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Shawnee	37 11 31.71	217 05 12.59	4.4430075
Blanket	100 17 17.19	280 11 06.93	4.2187340
Tiger	199 06 26.88	19 09 04.84	4.3251235
Badger	218 01 30.50	38 08 36.40	4.4809116
Gaines	276 52 32.20	97 04 54.93	4.5178375
Lost	332 33 47.99	152 39 24.59	4.5098914
Whaleback	5 24 02.14	185 22 55.57	4.4960782

GAINES, CHOCTAW NATION.

On a long wooded ridge about 10 miles northeast of McAlester and 7 miles southeast of South Canadian. A wagon road was cut through the woods to station from north end of ridge. The quarter corner to secs. 10 and 14, T. 7 N., R. 16 E., may be reached from station by going due south 22.51 chains, thence due west 19.55 chains. Theodolite elevated 30 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $35^{\circ} 05' 28.40''$. Longitude, $95^{\circ} 34' 51.13''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Lost	35 55 03.63	215 48 19.74	4.4843524
Scipio	97 04 54.93	276 52 32.20	4.5178375
Tiger	133 03 04.79	312 53 18.25	4.5462527
Badger	153 20 57.63	333 15 38.62	4.4933600
Checotah	182 27 43.81	2 28 21.63	4.5851466
Hartshorne	358 24 31.69	178 24 52.33	4.5183389
Tucker Knob	275 30 53.06	95 40 05.60	4.3886690
Enterprise	226 00 53.24	46 07 03.25	4.3536994

HARTSHORNE, CHOCTAW NATION.

On a flat, heavily wooded mountain about 4 miles south of Harts-horne, a town on the Choctaw, Oklahoma and Gulf Railroad. Most of the timber was cut down in April, 1895.

Station mark: Tall pine signal tree.

[Latitude, $34^{\circ} 47' 38.36''$. Longitude, $95^{\circ} 34' 15.10''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hewitt	35 14 24.67	215 09 04.93	4.3944219
Lost	113 44 21.12	293 37 18.15	4.3127665
Gaines	178 24 52.33	358 24 31.69	4.5183389
Tucker Knob	217 26 30.29	37 35 20.15	4.5861956
Redoak	234 09 44.63	54 23 35.08	4.6567634
Dexter	326 03 29.37	146 08 49.37	4.4091583

BADGER, CREEK NATION.

On a high prairie point locally known as Badger Mountain, 10 miles west of Eufaula. The corner common to secs. 8, 9, 16, and 17, T. 10 N., R. 15 E., may be reached from station by going due east 4.85 chains to the north-south line between secs. 16 and 17, thence due north 33.14 chains to corner.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $35^{\circ} 20' 31.26''$. Longitude, $95^{\circ} 44' 04.31''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Scipio	38 08 36.40	218 01 30.50	4.4809116
Tiger	71 52 39.46	251 48 11.00	4.0913890
Council Hill	175 51 06.08	355 50 26.81	4.3724920
Checotah	235 44 48.55	55 50 46.86	4.2760000
Gaines	333 15 38.62	153 20 57.63	4.4933600
Chimney	214 51 02.85	35 00 51.93	4.6497068

TIGER, CREEK NATION.

On a wooded ridge, about 3 miles north from Cummings's store, which is 20 miles from Eufaula, on Eufaula-Wetumka road. The corner common to secs. 29, 30, 31, and 32, T. 10 N., R. 14 E., may be

reached from station by going due east 30.68 chains to north-south line between secs. 29 and 30, thence due north 15.16 chains to corner. Theodolite elevated 40 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $35^{\circ} 18' 26.45''$. Longitude, $95^{\circ} 51' 48.61''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Scipio	19 09 04.84	199 06 26.88	4.3251235
Blanket	53 46 48.92	233 37 59.83	4.4590231
Rentie	142 06 28.55	322 01 04.10	4.3616769
Council Hill	200 03 04.43	20 06 54.34	4.4643900
Badger	251 48 11.00	71 52 39.46	4.0913890
Gaines	312 53 18.25	133 03 04.79	4.5462527

RENTIE, CREEK NATION.

On a prominent mountain, 4 or 5 miles east from Morris Rentie's house. Mr. Rentie lives 14 miles from Okmulgee, on Okmulgee-McDermott road. Theodolite elevated 38 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $35^{\circ} 28' 14.98''$. Longitude, $96^{\circ} 01' 08.82''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Blanket	14 24 34.36	194 21 08.03	4.5600038
Bean	76 43 08.80	256 37 30.32	4.1795973
McDermott	93 54 27.56	273 44 35.08	4.4114903
Buck	183 58 12.43	3 58 59.30	4.4656679
Council Hill	248 59 13.94	69 08 29.82	4.4118748
Tiger	322 01 04.10	142 06 28.55	4.3616769

BEAN, CREEK NATION.

On the highest part of a timbered ridge, 7 miles southwest from Morris Rentie's and 4 miles northeast from McDermott. The corner common to secs. 7, 8, 17, and 18, T. 11 N.; R. 11 E., may be reached from station by going S. $51^{\circ} 08' E.$, 29.53 chains. Theodolite elevated 38 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, $35^{\circ} 26' 21.88''$. Longitude, $96^{\circ} 10' 52.32''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Wewoka.....	60 11 47.16	239 59 56.76	4.5533090
McDermott	115 18 38.41	295 14 24.69	4.0861590
Philips	161 33 41.15	341 29 17.64	4.5559096
Slicker	185 56 33.15	5 58 23.18	4.6605192
Buck	207 04 12.40	27 10 38.80	4.5642776
Rentie.....	256 37 30.32	76 43 08.80	4.1795973
Blanket	349 44 31.44	169 46 42.33	4.5078207

M'DERMOTT, CREEK NATION.

On a high prairie ridge, 7 miles northwest from McDermott. The corner common to secs. 13, 18, 19, and 24, T. 12 N., R. 9 E., may be reached from station by going due north 40 chains, thence S. 88° E. 15.80 chains.

Station mark: Rock marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$

[Latitude, $35^{\circ} 29' 10.83''$. Longitude, $96^{\circ} 18' 09.63''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Wewoka	40 57 33.57	220 49 55.98	4.4838314
Philips	179 13 51.81	359 13 42.78	4.4610444
Buck.....	225 12 47.84	45 23 29.08	4.5910136
Rentie	273 44 35.08	93 54 27.56	4.4114903
Bean.....	295 14 24.69	115 18 38.41	4.0861590

PHILIPS, CREEK NATION.

On the highest point of a ridge $2\frac{1}{2}$ miles southwest of Philipsburg. The quarter corner between secs. 24 and 25, T. 15 N., R. 9 E., may be reached from station by going due north 46.50 chains, thence S. $80^{\circ} 30'$ W. 4.15 chains. Theodolite elevated 35 feet.

Station mark: Rock marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$

[Latitude, 35° 44' 48.79". Longitude, 96° 18' 25.07".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Phantom	185 08 22.08	5 09 32.36	4.5250097
Slicker	234 39 23.83	54 45 39.10	4.2952760
Buck	272 55 34.92	93 06 27.21	4.4487212
Bean	341 29 17.64	161 33 41.15	4.5559096
McDermott	359 13 42.78	179 13 51.81	4.4610444

SLICKER, CREEK NATION.

On the highest point of a timbered ridge 10 miles south of Sapulpa. The corner common to secs. 22, 23, 26, and 27, T. 16 N., R. 11 E., may be reached from station by going due east 35.19 chains to north-south line, thence due south 37.13 chains. Theodolite elevated 30 feet.

U. S.

Station mark: Rock marked +

G. S.

[Latitude, 35° 50' 58.77". Longitude, 96° 07' 43.51".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Bean	5 58 23.18	185 56 33.15	4.6605192
Philips	54 45 39.10	234 39 23.83	4.2952760
Phantom	149 16 21.79	329 11 15.53	4.4075133
Red Fork	196 32 28.97	16 35 52.47	4.4832632
Prairie	212 57 39.81	33 00 57.80	4.1916511
Concharty	268 29 43.14	88 42 30.97	4.5172609
Buck	317 09 01.96	137 13 39.87	4.2445088

COUNCIL HILL, CREEK NATION.

On the highest point of a timbered ridge, near the old Creek camping ground known as Council Hill, 20 miles northwest of Checotah, 16 miles southeast of Okmulgee. From closing corner to secs. 5 and 6, T. 12 N., R. 15 E., station may be reached by going N. 46° 01' W. 15.47 chains. Theodolite elevated 40 feet.

U. S.

Station mark: Rock marked +

G. S.

[Latitude, $35^{\circ} 33' 14.29''$. Longitude, $95^{\circ} 45' 12.03''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Tiger.....	20 06 54.34	200 03 04.43	4.4643900
Rentie	69 08 29.82	248 59 13.94	4.4118748
Buck.....	132 10 36.83	312 02 06.04	4.4729877
Concharty	178 15 58.87	358 15 35.01	4.5266554
Chimney	244 15 19.04	64 25 49.08	4.4801495
Checotah	306 39 30.76	126 46 09.33	4.3340941
Badger	355 50 26.81	175 51 06.08	4.3724920

CHECOTAH, CREEK NATION.

On a prairie hill 3 miles southwest of Checotah, a town on the Missouri, Kansas and Texas Railway. From quarter corner on line between secs. 12 and 13, T. 11 N., R. 16 E., station bears N. $38^{\circ} 55'$ E. 17.80 chains distant.

U. S.

Station mark: A rock marked $\begin{matrix} + \\ \text{G. S.} \end{matrix}$

G. S.

[Latitude, $35^{\circ} 26' 15.65''$. Longitude, $95^{\circ} 33' 45.61''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Badger	55 50 46.86	235 44 48.55	4.2760000
Council Hill	126 46 09.33	306 39 30.76	4.3340941
Chimney	200 56 57.80	21 00 47.78	4.4443800
Gaines	2 28 21.63	182 27 43.81	4.5851466
Tucker Knob	330 54 23.74	151 03 00.85	4.6691536
Enterprise.....	327 20 21.69	147 25 55.37	4.4319011
Robinson	290 25 39.72	110 35 09.18	4.4230683
Nebo.....	240 27 44.88	60 34 14.95	4.2891939

CHIMNEY, CREEK NATION.

On the highest point of a prairie hill locally known as Chimney Mountain, 8 or 10 miles southwest of Muscogee.

Station mark: A tree wired up, to which all angles are referred.

U. S.

Reference mark: Rock marked $\begin{matrix} + \\ \text{G. S.} \end{matrix}$ 5 feet west-northwest of tree.

G. S.

[Latitude, 35° 40' 18.52". Longitude, 95° 27' 10.08".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Checotah	21 00 47.78	206 56 57.80	4.4443800
Badger	35 00 51.93	214 51 02.85	4.6497068
Council Hill	64 25 49.08	244 15 19.04	4.4801495
Concharty	126 08 47.59	305 57 51.63	4.5425065
Grand	230 26 08.37	50 35 12.03	4.4812237
Choate	270 04 36.12	90 27 02.85	4.7640609
Nebo	336 58 36.97	157 01 17.93	4.2507681

CONCHARTY, CREEK NATION.

On a high knob in the southeastern portion of the Concharty Mountains, 4 miles northeast of Concharty. From corner common to secs. 13, 18, 19, and 24, on eastern boundary of T. 16 N., R. 14 E., station bears N. 63° E., 4 chains distant. Theodolite elevated 50 feet.

U. S.

Station mark: Rock marked +

G. S.

[Latitude, 35° 51' 24.53". Longitude, 95° 45' 52.43".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Council Hill	358 15 35.01	178 15 58.87	4.5266554
Buck	56 57 41.33	236 49 32.51	4.3988766
Slicker	88 42 30.97	268 29 43.14	4.5172608
Prairie	116 42 33.87	296 33 02.96	4.4362032
Weer	175 20 16.00	355 19 30.49	4.3773732
Barber	247 34 42.92	67 45 53.06	4.5210429
Grand	271 14 31.71	91 34 33.92	4.7120103
Chimney	305 57 51.63	126 08 47.59	4.5425065

BUCK, CREEK NATION.

On a high ridge 9 miles a little west of north of Okmulgee. The corner common to secs. 35, 36, 1, and 2, T. 15 N., R. 12 E., may be reached from station by going due west 26 links to north-south line, thence due south 38.38 chains. Theodolite elevated 30 feet.

U. S.

Station mark: Rock marked +

G. S.

[Latitude, 35° 44' 00.81". Longitude, 95° 59' 48.31".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Rentie	3 58 59.30	183 58 12.43	4.4656679
Bean	27 10 38.80	207 04 12.40	4.5642776
McDermott	45 23 29.08	225 12 47.84	4.5910136
Philips	93 06 27.21	272 55 34.92	4.4487212
Slicker	137 13 39.87	317 09 01.96	4.2445088
Prairie	172 25 24.99	352 24 04.40	4.4174915
Concharty	236 49 32.51	56 57 41.33	4.3988766
Council Hill	312 02 06.04	132 10 36.83	4.4729877

MERCHANT, CREEK NATION.

On a very prominent prairie hill about $1\frac{1}{2}$ miles northeast from Inola, a station on the St. Louis, Iron Mountain and Southern Railway. From quarter corner on line between secs. 9 and 10, T. 19 N., R. 17 E., station bears N. 54° 30' E., 41.07 chains distant.

Station mark: Rock monument 7 feet high.

[Latitude, 36° 08' 42.58". Longitude, 95° 29' 07.50".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Weer	73 08 57.47	252 58 19.50	4.4518697
Grand	321 38 24.35	141 48 40.13	4.6270376
Barber	344 09 40.46	164 11 49.69	4.3043975
McGinnis	134 01 12.44	313 53 07.78	4.4539608
Corbett	189 12 37.68	9 13 03.50	3.8340395
Saline	266 22 21.40	86 38 36.97	4.6170996

WEER, CREEK NATION.

On the highest one of several small prairie hills 6 miles north of Weer post-office and store. The corner common to secs. 1, 2, 11, and 12, T. 18 N., R. 14 E., may be reached from station by going due east 34.64 chains to north-south line, thence south 52.68 chains.

Station mark: Signal tree.

[Latitude, 36° 04' 15.01". Longitude, 95° 47' 10.07".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Prairie	62 52 06.41	242 43 19.61	4.4017803
Red Fork	101 46 24.03	281 37 41.43	4.3553486
Merchant	252 58 19.50	73 08 57.47	4.4518697
Concharty	355 19 30.49	175 20 15.97	4.3773732
Tulsa	122 49 00.53	302 39 44.40	4.4476239
McGinnis	193 10 20.92	13 12 56.02	4.4585858
Dog Creek	221 35 43.95	41 48 22.82	4.6830193
Corbett	241 53 34.36	62 04 38.55	4.5037586

PRAIRIE, CREEK NATION.

On a prairie knob 5 miles east of Sapulpa. The corner common to secs. 9, 10, 15, and 16, T. 17 N., R. 12 E., may be reached from station by going due east 28.30 chains to north-south line, thence south 41.54 chains.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, 35° 58' 01.88". Longitude, 96° 02' 05.92".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Slicker	33 00 57.80	212 57 39.81	4.1916511
Phantom	112 34 54.96	292 26 29.81	4.3672550
Red Fork	180 46 50.04	0 46 55.21	4.2074900
Weer	242 43 19.61	62 52 06.41	4.4017803
Concharty	296 33 02.96	116 42 33.87	4.4362032
Buck	352 24 04.40	172 25 24.99	4.4174915
Tulsa	177 28 19.97	357 27 52.19	4.4267742

RED FORK, CREEK NATION.

On a timbered ridge three-fourths mile west from Red Fork. The corner common to secs. 21, 22, 27, and 28, T. 19 N., R. 13 E., may be reached from station by going due east 17.95 chains to north-south line, thence south 41.80 chains. Theodolite elevated 30 feet.

U. S.
Station mark: Rock marked +
G. S.

[Latitude, 36° 06' 44.99". Longitude, 96° 01' 57.14".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Prairie	00 46 53.21	180 46 50.04	4.2074900
Slicker	16 35 52.47	196 32 28.97	4.4832632
Phantom	71 43 14.27	251 34 43.06	4.3595162
Weer.....	281 37 41.43	101 46 24.03	4.3553486

PHANTOM, CREEK NATION.

On the highest part of a timbered ridge 15 miles from Red Fork, 5 miles southwest of Mr. Rockhammer's house. The corner common to secs. 7, 8, 17, and 18, T. 18 N., R. 10 E., may be reached from station by going due west 24.90 chains to north-south line, thence south 2.25 chains. Theodolite elevated 40 feet.

U. S.

Station mark: Rock marked +
G. S.

[Latitude, 36° 02' 51.26". Longitude, 96° 16' 25.20".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Philips	5 09 32.36	185 08 22.08	4.5250097
Red Fork.....	251 34 43.06	71 43 14.27	4.3595162
Prairie	292 26 29.81	112 34 54.96	4.3672550
Slicker	329 11 15.53	149 16 21.79	4.4075133

WEWOKA, SEMINOLE NATION.

On a prominent wooded hill 8 miles north-northwest of Wewoka, from which all trees have been cut down, excepting one, which was trimmed and used as a signal. The corner common to secs. 1, 2, 11, and 12, T. 9 N., R. 7 E., may be reached from station by going due south 16.92 chains to east-west line, thence west 35.06 chains on line to corner.

Station mark: Lone signal tree.

U. S.

Reference mark: Rock marked + 3 feet west of signal tree.

G. S.

[Latitude, $35^{\circ} 16' 43.53''$. Longitude, $96^{\circ} 31' 19.91''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
McDermott	220 49 55.98	40 57 33.57	4.4838314
Bean	239 59 56.76	60 11 47.16	4.5533090
Blanket	290 32 04.48	110 46 03.01	4.5944177
Bruner	328 15 35.18	148 20 51.31	4.4220467
Hawkins	345 15 32.26	165 19 14.59	4.5860074

TURKEY SPRING, CHICKASAW NATION.

On a flat timbered ridge 5 miles a little east of north from Iona post-office, on Iona-Hart road, about 54 yards east from road. The quarter-section corner between secs. 4 and 9, T. 2 N., R. 3 E., true azimuth of which is $56^{\circ} 26'$, is distant from station 514 feet. Theodolite elevated 44 feet.

Station mark: A stone post, 26 by 6 by 6 inches, set 24 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $33^{\circ} 40' 00.72''$. Longitude, $96^{\circ} 59' 29.59''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Center	210 40 45.68	30 43 48.54	4.2039410
Double Mound	265 27 22.42	85 35 24.28	4.3350359
Hickory Grove	315 37 36.52	135 42 22.89	4.2644222
Falls	27 32 57.77	207 27 36.67	4.4950993
Bounds	48 39 51.04	228 29 05.61	4.5877258
Table Hills	90 51 30.05	270 34 20.49	4.6635548
Washington	142 58 42.56	322 52 22.28	4.4491675

HICKORY GROVE, CHICKASAW NATION.

On summit of timbered hill $1\frac{1}{4}$ miles southeast from town of Hickory. Point is locally known as Hickory Grove. The corner common to secs. 13, 14, 23, and 24, T. 1 N., R. 4 E., true azimuth of which is $255^{\circ} 30'$, is distant from station 2,320 feet. Theodolite elevated 40 feet.

Station mark: A rock found in place about 2 feet square, 3 or 4 inches above ground, a hole drilled 1 inch deep near center of rock
 U. S.
 and filled with lead. A large + cut on rock around center.
 G. S.

[Latitude, 34° 32' 53.99". Longitude, 96° 51' 05.38%.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Mill Creek.....	5 18 49.48	185 18 11.56	4.2667531
Falls	61 59 09.76	241 49 03.68	4.4908862
Turkey Spring	135 42 22.89	315 37 36.52	4.2644222
Double Mound.....	210 27 07.44	30 30 22.15	4.2359485
Kennedy	224 48 45.67	44 53 11.02	4.2274279
Pontotoc	278 53 40.55	99 02 20.76	4.3746222
Reagan.....	316 17 48.34	136 23 47.21	4.3699816

REAGAN, CHICKASAW NATION.

On high prairie point in northwest corner of Harris's pasture, about $4\frac{1}{2}$ miles northeast from Reagan post-office. About $1\frac{1}{2}$ miles west from Tishomingo-Stonewall road at point 11 miles from (Old) Tishomingo. The corner common to secs. 9, 10, 15, and 16, T. 2 S., R. 6 E., true azimuth of which is $318^{\circ} 39'$, is distant from station 2,312.6 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, 34° 23' 43.55". Longitude, 96° 40' 31.32%.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Teller	7 30 36.39	187 29 30.27	4.3615846
Provence	47 23 52.41	227 12 48.55	4.6131505
Mill Creek.....	85 27 00.60	265 20 24.64	4.2544722
Hickory Grove.....	136 23 47.21	316 17 48.34	4.3699816
Pontotoc	208 35 59.02	28 38 39.50	4.1793967
Giant	260 19 57.29	80 33 09.27	4.5596544

MILL CREEK, CHICKASAW NATION.

On highest point of prairie ridge, 2 miles south of and visible from Mill Creek post-office. Point is covered with limestone rock. The corner common to secs. 9, 10, 15, and 16, T. 2 S., R. 4 E., true azimuth of which is $135^{\circ} 02'$, is distant from station 4,295 feet.

Station mark: A stone post, 26 by 6 by 6 inches, set 24 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $34^{\circ} 22' 56.75''$. Longitude, $96^{\circ} 52' 12.38''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Provence	24 54 06.30	204 49 37.24	4.4635652
Criner.....	46 44 39.50	226 33 22.63	4.6265169
Falls	98 33 05.83	278 23 38.88	4.4135521
Hickory Grove.....	185 18 11.56	5 18 49.48	4.2667531
Reagan.....	265 20 24.64	85 27 00.60	4.2544722
Teller	324 59 42.62	145 05 11.43	4.4158821

KENNEDY, CHICKASAW NATION.

On high, bald ridge about 8 miles west from Stonewall. The Stonewall-Roff road passes within 50 yards of station at point 8 miles from former. Station is on the north side of fence. The quarter-section corner between secs. 7 and 12, T. 2 N., Rs. 5 and 6 E., true azimuth of which is $183^{\circ} 55'$, is distant from station 900 feet.

Station mark: A stone post, 30 by 8 by 8 inches, set 27 inches in the
U. S.

ground, with a copper bolt marked + sunk in center of top.

G. S.

[Latitude, $34^{\circ} 39' 22.41''$. Longitude, $96^{\circ} 43' 18.12''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hickory Grove	44 53 11.02	224 48 45.67	4.2274279
Double Mound.....	132 09 30.35	312 08 19.53	3.6309344
Sulser	260 01 14.71	80 13 25.73	4.5210877
Pontotoc	323 43 23.24	143 47 38.93	4.2882158
Giant	299 41 26.54	119 56 15.74	4.6634185

CENTER, CHICKASAW NATION.

On prairie 1 mile south from Center-McGee road at point 5 miles from Center. Station is not on the highest point, but three-fourths mile south from it. The corner common to secs. 20, 21, 28, and 29, T. 4 N., R. 4 E., true azimuth of which is $217^{\circ} 26'$, is distant from station 2,791.8 feet.

Station mark: A stone post, 26 by 6 by 6 inches, set 24 inches in the
U. S.

ground, with a copper bolt marked + sunk in center of top.

G. S.

[Latitude, $34^{\circ} 47' 26.98''$. Longitude, $96^{\circ} 54' 08.58''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Double Mound.....	311 59 42.83	132 04 42.52	4.2556380
Turkey Spring	30 43 48.54	210 40 45.68	4.2039410

DOUBLE MOUND, CHICKASAW NATION.

About 1 mile north of road between Stonewall and Roff at point 9 miles from Stonewall, on most northern of two prairie hills known as the Double Mounds. The corner common to secs. 34, 35, 2, and 3, Ts. 2 and 3 N., R. 5 E., true azimuth of which is $9^{\circ} 24'$, is distant from station 553.7 feet.

Station mark: A rock monument about 7 feet high.

[Latitude, $34^{\circ} 40' 55.51''$. Longitude, $96^{\circ} 45' 22.61''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Kennedy	312 08 19.53	132 09 30.35	3.6309344
Hickory Grove.....	30 30 22.15	210 27 07.44	4.2359485
Turkey Sprin	85 35 24.28	265 27 22.42	4.3350359
Center	132 04 42.52	311 59 42.83	4.2556380

WASHINGTON, CHICKASAW NATION.

On high ridge, a portion of which is covered with timber, about 6 miles northeast from Paoli, a small town on the Gulf, Colorado and Santa Fe Railway, about 1 mile south from road between Johnson and Purcell, at point 7 miles west from former. The corner common to secs. 25, 26, 35, and 36, T. 5 N., R. 1 E., true azimuth of which is $185^{\circ} 40'$, is distant from station 290 feet.

Station mark: A stone post, 42 by 8 by 8 inches, set 38 inches in U. S.
the ground, copper bolt marked + sunk in center.
G. S.

[Latitude, $34^{\circ} 52' 09.06''$. Longitude, $97^{\circ} 10' 36.45''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Bounds.....	14 03 42.38	193 59 14.37	4.6948367
Table Hills	53 08 07.47	232 57 15.59	4.5608000
Purcell	122 35 38.65	302 26 22.45	4.4657995
Turkey Spring	322 52 22.28	142 58 42.56	4.4491675
Falls	357 04 13.48	177 05 10.62	4.7010726

PURCELL, CHICKASAW NATION.

On high prairie ridge 6 miles west from Purcell. The Purcell-Chickasha road passes 1 mile south from station. The quarter-section corner between secs. 7 and 8, T. 6 N., R. 2 W., true azimuth of which is $299^{\circ} 18'$, is distant from station 1,933 feet.

Station mark: A stone post, 26 by 7 by 7 inches, set 24 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $35^{\circ} 00' 38.92''$. Longitude, $97^{\circ} 26' 47.65''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Washington	302 26 22.45	122 35 38.65	4.4657995
Table Hills	6 38 31.16	186 36 52.96	4.5778655
Dibble	108 12 05.06	288 04 47.35	4.3082296

DIBBLE, CHICKASAW NATION.

On point with scattering timber near prairie, $2\frac{3}{4}$ miles northwest of Dibble. The quarter-section corner between secs. 19 and 20, T. 7 N., R. 4 E., true azimuth of which is $287^{\circ} 41'$, is distant from station 1,902 feet. Theodolite elevated 34 feet.

Station mark: A stone post, 30 by 6 by 6 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $35^{\circ} 04' 04.37''$. Longitude, $97^{\circ} 39' 30.03''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Purcell	288 04 47.35	108 12 05.06	4.3082296
Table Hills	341 05 42.68	161 11 20.28	4.6665312
Marlow	28 28 13.04	208 19 49.32	4.6723677

MARLOW, CHICKASAW NATION.

On a sand hill covered with small black-jack trees about 5 miles northeast from Marlow, a town on Chicago, Rock Island and Pacific Railway. Road between Marlow and Rush Springs passes 2 miles west from station at point 4 miles from Marlow. Can be seen from both Marlow and Rush Springs. The corner common to secs. 25, 26, 35, and 36, T. 3 N., R. 7 W., true azimuth of which is $255^{\circ} 43'$, is distant from station 2,245 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $34^{\circ} 41' 41.90''$. Longitude, $97^{\circ} 54' 10.85''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Dibble	208 19 49.32	28 28 13.04	4.6723677
Table Hills	273 45 57.14	93 59 54.38	4.5744916
Velma.....	325 13 14.67	145 20 40.59	4.5463148

TABLE HILLS, CHICKASAW NATION.

On a high timbered ridge about 4 miles north from Foster post-office, about 1 mile southwest from a flat-topped prairie hill, the highest of several hills locally known as "The Table Hills." The corner common to secs. 2, 3, 10, and 11, T. 2 N., R. 3 E., true azimuth of which is $339^{\circ} 25'$, is distant from station 1,955.2 feet.

Station mark: A stone post, 30 by 6 by 6 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $34^{\circ} 40' 19.40''$. Longitude, $97^{\circ} 29' 39.52''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Velma	33 34 32.37	213 28 03.67	4.5002213
Marlow	93 59 54.38	273 45 57.14	4.5744916
Dibble	161 11 20.28	341 05 42.68	4.6665312
Purcell	186 36 52.96	6 38 31.16	4.5778655
Washington	232 57 15.59	53 08 07.47	4.5608000
Turkey Spring	270 34 20.49	90 51 30.05	4.6635548
Falls	311 39 31.21	131 51 16.40	4.6284726
Bounds.....	326 45 23.84	146 51 44.83	4.4953517

BOUNDS, CHICKASAW NATION.

On high prairie ridge near center of Arbuckle Mountains, in pasture owned by Mr. Bounds, about 6 miles a little north of east from Elk post-office. Road between Woodford and Hennepin passes one-half mile east from station at point 7 miles from former. The corner common to secs. 21, 22, 27, and 28, T. 1 S., R. 1 W., true azimuth of which is $281^{\circ} 02'$, is distant from station 2,627 feet.

Station mark: A stone post, 26 by 7 by 7 inches, set 24 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, 34° 26' 09.71". Longitude, 97° 18' 27.77".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	<i>Meters.</i>
Bomer	25 31 01.46	205 25 18.23	4.5591404
Velma	89 47 04.84	269 34 17.46	4.5396891
Table Hills	146 51 44.83	326 45 23.84	4.4953517
Washington	193 59 14.37	14 03 42.38	4.6948367
Turkey Spring	228 29 05.61	48 39 51.04	4.5877258
Falls	278 14 36.70	98 20 00.00	4.1689755
Criner.....	344 43 47.36	164 47 17.30	4.5595469

FALLS, CHICKASAW NATION.

On high timbered hill known as "East Timber Hill," about 7 miles a little west of south from Davis, on the Gulf, Colorado and Santa Fe Railway. All timber cut from summit except one tree, which was left for signal. The quarter corner between secs. 1 and 36, Ts. 1 and 2 S., R. 1 E., true azimuth of which is 151° 26', is distant from station 1,232 feet.

Station mark: Lone signal tree.

[Latitude, 34° 25' 00.67". Longitude, 97° 08' 55.90".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	<i>Meters.</i>
Criner.....	8 49 30.83	188 47 38.72	4.5219151
Bomer	44 44 19.94	224 33 14.71	4.6333908
Bounds.....	98 20 00.00	278 14 36.70	4.1689755
Table Hills	131 51 16.40	311 39 31.21	4.6284726
Washington	177 05 10.62	357 04 13.48	4.7010726
Turkey Spring	207 27 36.67	27 32 57.77	4.4950993
Hickory Grove.....	241 49 03.68	61 59 09.76	4.4908862
Mill Creek.....	278 23 38.88	98 33 05.83	4.4135521
Provence	335 57 43.01	156 02 39.05	4.5192812

VELMA, CHICKASAW NATION.

On northwest corner of high timbered ridge about 9 miles north from Loco post-office, about 3 miles south from Velma, a post-office on Wild Horse Creek, 5 miles below Arthur post-office. The corner

common to secs. 25, 26, 35, and 36, T. 1 S., R. 5 W., true azimuth of which is $238^{\circ} 08'$, is distant from station 271 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $34^{\circ} 26' 03.39''$. Longitude, $97^{\circ} 41' 04.85''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Mud Creek	5 57 32.56	185 56 19.93	4.5025994
Marlow	145 20 40.59	325 13 14.67	4.5463148
Table Hills	213 28 03.67	33 34 32.37	4.5002213
Bounds	269 34 17.46	89 47 04.84	4.5396891
Bomer	329 28 46.75	149 35 48.03	4.5766564

MUD CREEK, CHICKASAW NATION.

On high prairie ridge in Washington's pasture, 13 miles south from Loco post-office and 7 miles west from Cornish post-office. Road between Loco and Oscar passes 50 yards east of station. The corner common to secs. 3, 4, 9, and 10, T. 5 S., R. 5 W., true azimuth of which is $347^{\circ} 14'$, is distant from station 1,800 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $34^{\circ} 08' 56.49''$. Longitude, $97^{\circ} 43' 13.77''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Velma	185 56 19.93	5 57 32.56	4.5025994
Bomer	272 10 17.03	92 18 29.13	4.3517708

BOMER, CHICKASAW NATION.

On a very flat timbered ridge 5 miles southwest from Hewitt post-office. Road between Hewitt and Atlee passes three-fourths mile north from station at point $4\frac{1}{2}$ miles from Hewitt. About 2 miles southwest from point known as "Bomers Point." The corner common to secs. 1, 2, 11, and 12, T. 5 S., R. 3 W., true azimuth of which is $218^{\circ} 21'$, is distant from station 1,419 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 27 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, 34° 08' 27.98". Longitude, 97° 28' 37.03".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Mud Creek	92 18 29.13	272 10 17.03	4.3517708
Velma	149 35 48.03	329 28 46.75	4.5766564
Bounds.....	205 25 18.23	25 31 01.46	4.5591404
Falls	224 33 14.71	44 44 19.94	4.6333908
Criner.....	275 06 01.87	95 15 12.86	4.4025346

CRINER, CHICKASAW NATION.

On high prairie ridge 6 miles southwest from Ardmore. Road from Ardmore to Brook post-office passes within one-half mile of station at point where it crosses Hickory Creek. The station is south of this point, and can be seen from Ardmore. The quarter corner between secs. 15 and 16, T. 5 S., R. 1 E., true azimuth of which is 258° 06', is distant from station 3,010 feet.

Station mark: A stone post, 24 by 7 by 7 inches, set 22 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, 34° 07' 13.98". Longitude, 97° 12' 15.02".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Bomer	95 15 12.86	275 06 01.87	4.4025346
Bounds.....	164 47 17.30	344 43 47.36	4.5595469
Falls	188 47 38.72	8 49 30.83	4.5219151
Mill Creek.....	226 33 22.63	46 44 39.50	4.6265169
Provence	261 46 24.86	81 53 11.50	4.2732401
Marietta.....	333 55 54.13	153 59 48.74	4.3893686

MARIETTA, CHICKASAW NATION.

On a prominent prairie peak 2 miles southeast from town of Marietta on the Gulf, Colorado and Santa Fe Railway. The corner common to secs. 21, 22, 27, and 28, T. 8 S., R. 2 E., true azimuth of which is 148° 09', is distant from station 1,777 feet.

Station mark: A rock monument 6 feet high.

[Latitude, $33^{\circ} 55' 19.18''$. Longitude, $97^{\circ} 05' 15.67''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Criner.....	153 59 48.74	333 55 54.13	4.3893686
Provence.....	197 34 50.80	17 37 41.72	4.4133530
Cliff.....	253 36 40.99	73 48 51.42	4.5436688

PROVENCE, CHICKASAW NATION.

On a round prairie hill the most prominent of the prairie hills known as the "Yellow Hills." One mile southeast from Provence post-office. The corner common to secs. 4, 5, 8, and 9, T. 5 S., R. 3 E., true azimuth of which is $347^{\circ} 49'$, is distant from station 282 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 28 inches in the U. S. ground, with copper bolt marked + sunk in center of top.
G. S.

[Latitude, $34^{\circ} 08' 40.52''$. Longitude, $97^{\circ} 00' 10.28''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Marietta.....	17 37 41.72	197 34 50.80	4.4133530
Criner.....	81 53 11.50	261 46 24.86	4.2732401
Falls.....	156 02 39.05	335 57 43.01	4.5192812
Mill Creek.....	204 49 37.24	24 54 06.30	4.4635652
Teller.....	259 26 15.23	79 36 11.42	4.4417207
Cliff.....	300 00 24.74	120 09 46.16	4.4726143

CLIFF, CHICKASAW NATION.

On a prairie ridge $2\frac{1}{2}$ miles southwest from Cliff post-office, and about the same distance northeast from Kingston post-office. Road between Cliff and Kingston passes one-fourth mile from station. The corner common to secs. 19, 24, 25, and 30, T. 6 S., Rs. 5 and 6 E., true azimuth of which is $162^{\circ} 15'$, is distant from station 1,006.5 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 28 inches in the U. S. ground, with copper bolt marked + sunk in center of top.
G. S.

[Latitude, $34^{\circ} 00' 37.47''$. Longitude, $96^{\circ} 43' 28.30''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Marietta.....	73 48 51.42	253 36 40.99	4.5436688
Provence.....	120 09 46.16	300 00 24.74	4.4726143
Teller	184 23 02.16	4 23 35.58	4.3004052

TELLER, CHICKASAW NATION.

On a high timbered ridge locally known as "Big Mush Mountain," $3\frac{1}{2}$ miles a little west of south from Tishomingo and 1 mile east from Teller post-office. Ridge breaks off abruptly to the north and slopes gradually south. The corner common to secs. 19, 20, 29, and 30, T. 4 S., R. 6 E., true azimuth of which is $317^{\circ} 11'$, is distant from station 1,268 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 28 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, $34^{\circ} 11' 23.75''$. Longitude, $96^{\circ} 42' 28.68''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Cliff.....	4 23 35.58	184 23 02.16	4.3004052
Provence.....	79 36 11.42	259 26 15.23	4.4417207
Mill Creek.....	145 05 11.43	324 59 42.62	4.4158821
Reagan.....	187 29 30.27	7 30 36.39	4.3615846

PONTOTOC, CHICKASAW NATION.

On a high bare limestone ridge $2\frac{1}{2}$ miles northeast from Pontotoc post-office, 2 miles east from road between Stonewall and Pontotoc at a point 10 miles from Stonewall. The quarter corner between secs. 29 and 30, T. 1 N., R. 7 E., true azimuth of which is $45^{\circ} 02'$, is distant from station 981 feet.

U. S.

Station mark: A copper bolt marked + sunk in a large limestone
 rock found in place.
 G. S.

[Latitude, 34° 30' 54.14". Longitude, 96° 35' 47.67".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Reagen	28 38 39.50	208 35 59.02	4.1793967
Hickory Grove	99 02 20.76	278 53 40.55	4.3746222
Kennedy	143 47 38.93	323 43 23.24	4.2882158
Sulser	224 47 54.19	44 55 48.06	4.4790149
Giant	284 10 03.04	104 20 35.63	4.4686086

ENTERPRISE, CHOCTAW NATION.

On a high hill in T. 9 N., R. 18 E., about 1 mile west from the town of Enterprise. All timber, with the exception of one tree, was cut from the summit of hill and the tree left standing was used for signal.

Station mark: Lone signal tree.

[Latitude, 35° 13' 56.75". Longitude, 95° 24' 08.66".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Gaines	46 07 03.25	226 00 53.27	4.3536994
Checotah	147 25 55.37	327 20 21.69	4.4319011
Nebo	184 14 11.38	4 15 06.44	4.5110605
Robinson	217 13 52.15	37 17 46.84	4.2292121
Cavanal	284 59 47.36	105 24 47.52	4.8347026
Tucker Knob	335 52 44.55	155 55 48.17	4.2960739
Choate	227 44 10.22	48 04 44.53	4.8592724

TUCKER KNOB, CHOCTAW NATION.

About 13 miles north from Wilburton, a small town on the Choctaw, Oklahoma and Gulf Railroad, and about 12 miles a little south of west from Sansbois. All timber with the exception of 1 tree was cut from summit of peak, and the tree left standing was used for signal. From the corner common to secs. 16, 17, and 21, T. 7 N., R. 19 E., station may be reached by going due south 1,095 feet, thence due west 122.6 feet.

Station mark: Lone signal tree.

[Latitude, 35° 04' 11.03". Longitude, 95° 18' 49.74".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Gaines	95 40 05.62	275 30 53.09	4.3886687
Checotah	151 03 00.85	330 54 23.74	4.6691536
Enterprise	155 55 48.17	335 52 44.55	4.2960739
Nebo	173 36 57.38	353 34 48.08	4.7051448
Robinson	183 59 48.83	4 00 39.15	4.4999404
Redoak	287 04 00.84	107 09 02.70	4.1441831

ROBINSON, CHEROKEE NATION.

On high, flat-topped ridge in T. 10 N., 19 E., about 3 miles a little south of west from Starvilla. Theodolite elevated 20 feet.

Station mark: A stone post, 30 by 7 by 7 inches, set 28 inches in the
 U. S.
 ground, with copper bolt marked + sunk in center of top.
 G. S.

[Latitude, 35° 21' 14.51". Longitude, 95° 17' 22.45".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Tucker Knob	4 00 39.15	183 59 48.83	4.4999404
Enterprise	37 17 46.84	217 13 52.15	4.2292121
Checotah	110 35 09.18	290 25 39.72	4.4230683
Nebo	157 26 01.25	337 23 00.86	4.3101779
Choate	230 58 47.11	51 15 27.30	4.7461712
Cavanal	299 16 44.36	119 37 52.55	4.8054100
Redoak	342 40 55.60	162 45 08.23	4.5720205

NEBO, CHEROKEE NATION.

On highest part of flat ridge locally known as Nebo Mountain, about 12 miles northeast from Checotah and about 5 miles west of north from Burnett post-office. From corner common to secs. 10, 11, 14, and 15, T. 12 N., R. 18 E., station bears N. 60° 03' E., 17.31 chains distant. Theodolite elevated 30 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 8 inches in
 U. S.
 the ground, with copper bolt marked + sunk in center.
 G. S.

[Latitude, 35° 31' 26.45". Longitude, 95° 22' 33.56".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Enterprise	4 15 06.44	184 14 11.38	4.5110605
Checotah	60 34 14.95	240 27 44.88	4.2891939
Chimney	157 01 17.93	336 58 36.97	4.2507681
Grand	204 42 01.02	24 48 22.41	4.5940012
Choate	252 20 28.17	72 40 11.52	4.7296388
Cavanal	308 11 52.46	128 36 03.09	4.9081524
Robinson	337 23 00.86	157 26 01.25	4.3101779
Redoak	340 46 34.57	160 53 47.42	4.7611543
Tucker Knob	353 34 48.04	173 36 57.38	4.7051448

REDOAK, CHOCTAW NATION.

On highest point of flat-topped mountain known as Redoak Mountain, about 7 miles northwest from Redoak, a small town on Choctaw, Oklahoma and Gulf Railroad. From the corner common to secs. 2, 3, 34, and 35, on south boundary, T. 7 N., R. 20 E., station may be reached by going due north 21.10 chains, thence east 22.88 chains (to point 45 links east of center of station). Theodolite elevated 20 feet.

Station mark: Post-oak signal tree.

[Latitude, 35° 01' 57.96". Longitude, 95° 10' 04.12".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Tucker Knob	107 09 02.70	287 04 00.84	4.1441831
Nebo	160 53 47.42	340 46 34.57	4.7611543
Robinson	162 45 08.23	342 40 55.60	4.5720205
Cavanal	264 27 03.81	84 43 55.20	4.6515599
Hartshorne	54 23 35.08	234 09 44.63	4.6567634
Dexter	25 22 22.06	205 13 54.57	4.7230759
Winding Stair	318 56 13.09	139 05 31.03	4.5768480

CHOATE, CHEROKEE NATION.

On highest point of high, flat-topped mountain about 3 miles west of Bunch, a very small town on Kansas City, Pittsburg and Gulf Railroad. From the corner common to secs. 19, 24, 25, and 30, T. 14 N., R. 23 E., station may be reached by going west 20.22 chains and north 9.30 chains. Theodolite elevated 42 feet.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in

U. S.

the ground, with copper bolt marked + sunk in center of top.

G. S.

[Latitude, 35° 40' 10.11". Longitude, 94° 48' 40.38".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Cavanal	349 40 23.73	169 45 00.14	4.8292412
Enterprise.....	48 04 44.53	227 44 10.22	4.8592724
Robinson.....	51 15 27.30	230 58 47.11	4.7461712
Nebo.....	72 40 11.52	252 20 28.17	4.7296388
Chimney	90 27 02.85	270 04 36.12	4.7640609
Grand.....	119 30 07.47	299 16 41.44	4.5995755
Spade	201 48 16.56	21 51 57.17	4.4062574

CAVANAL, CHOCTAW NATION.

On Cavanal Mountain, a well-known point about 4 miles west of Poteau, a town on Kansas City, Pittsburg and Gulf Railroad. The corner common to secs. 16, 17, 20, and 21, T. 7 N., R. 25 E., may be reached from station by going due west 11.49 chains to the north-south line, thence north 10.75 chains.

Station mark: Copper bolt set in sandstone rock.

[Latitude, 35° 04' 15.08". Longitude, 94° 40' 43.06".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Redoak	84 43 55.20	264 27 03.81	4.6515599
Enterprise.....	105 24 47.52	284 59 47.36	4.8347026
Robinson.....	119 37 52.55	299 16 44.36	4.8054100
Nebo.....	128 36 03.09	308 11 52.46	4.9081524
Choate	169 45 00.14	349 40 23.73	4.8292416
Winding Stairs.....	31 26 09.15	211 18 39.19	4.5834269

GRAND, CHEROKEE NATION.

On high timbered ridge about 5 miles northeast from Fort Gibson, a town on St. Louis, Iron Mountain, and Southern Railway. The road from Fort Gibson to Melvin passes about 200 yards east of station. From the corner common to secs. 20, 21, 28, and 29, T. 16 N., R. 20 E., station may be reached by going north 0° 02' W. 7 chains, thence N. 54° 33' E. 17.50 chains. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 8 by 8 inches, with copper bolt

U. S.

marked + sunk in center of top.

G. S.

[Latitude, $35^{\circ} 50' 43.41''$. Longitude, $95^{\circ} 11' 39.74''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Nebo	24 48 22.41	204 42 01.02	4.5940012
Chimney	50 35 12.03	230 26 08.37	4.4812237
Concharty	91 34 33.92	271 14 31.71	4.7120103
Barber	123 48 12.76	303 40 07.04	4.3974645
Merchant	141 48 40.13	321 38 24.35	4.6270376
Corbett	147 55 54.08	327 46 03.56	4.6743218
Salina	202 55 33.73	23 01 29.85	4.5895756
Spade	264 29 41.79	84 46 50.98	4.6460932
Choate	299 16 41.44	119 30 07.47	4.5995755

SPADE, CHEROKEE NATION.

On high timbered hill known as Spade Mountain, 7 or 8 miles northwest from Stillwell, a town on Kansas City, Pittsburg and Gulf Railroad. From the quarter corner on line between secs. 1 and 12, T. 16 N., R. 24 E., station may be reached by going S. $89^{\circ} 39'$ E. 11.63 chains, thence due south 12.62 chains. Theodolite elevated 20 feet. Highest trees were cut from the summit of the hill.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in U. S.
the ground, with copper bolt marked + sunk in center.
G. S.

[Latitude, $35^{\circ} 52' 57.64''$. Longitude, $94^{\circ} 42' 23.01''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Choate	21 51 57.17	201 48 16.56	4.4062574
Grand	84 46 50.98	264 29 41.79	4.6460932
Salina	137 46 20.77	317 35 03.85	4.6314574
Kansas	165 54 43.46	345 50 55.29	4.5995950
Baptist	213 19 54.66	33 24 08.59	4.2945621

SALINA, CHEROKEE NATION.

On highest point of rolling timbered hills about $3\frac{1}{2}$ miles southwest from Salina court-house. From point 32.95 chains north, on line between secs. 35 and 36, T. 20 N., R. 21 E., station may be reached by going due east 9.50 chains. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 7 by 7 inches placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 10' 04.41''$. Longitude, $95^{\circ} 01' 33.97''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Grand.....	23 01 29.85	202 55 33.73	4.5895755
Merchant.....	86 38 36.97	266 22 31.40	4.6170996
Corbett.....	96 06 44.50	275 50 54.04	4.6068569
Dog Creek.....	124 56 53.98	304 42 34.65	4.6449413
Spavinaw.....	168 36 29.33	348 34 55.09	4.3035865
Round Springs.....	207 39 50.86	27 44 59.35	4.4469067
Kansas.....	249 58 38.63	69 06 09.42	4.3072366
Spade.....	317 35 03.85	137 46 20.77	4.6314574

BARBER, CREEK NATION.

On a small prairie mountain 3 miles northwest of Wagoner. The corner common to secs. 7, 8, 17, and 18, T. 17 N., R. 18 E., may be reached from station by going S. $84^{\circ} 30' \text{ E.}$, 14.56 chains to north-south line, thence south 60 chains.

Station mark: A rock marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$ sunk in ground flush with surface.

[Latitude, $35^{\circ} 58' 13.40''$. Longitude, $95^{\circ} 25' 27.94''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Concharty.....	67 45 53.06	247 34 42.92	4.5210429
Merchant.....	164 11 49.69	344 09 40.46	4.3043975
Corbett.....	170 27 26.89	350 25 43.32	4.4231780
Grand.....	303 40 07.04	123 48 12.76	4.3974645

BAPTIST, CHEROKEE NATION.

On a lone hill known as Mission Mountain, about $1\frac{1}{2}$ miles southwest from Baptist post-office, on Kansas City, Pittsburg and Gulf Railroad. All timber was cut from south end of hill with the exception of one tree, which was used for signal. From point 64.29 chains east on line between secs. 13 and 24, T. 18 N., R. 25 E., station may be reached by going due south 3.51 chains.

Station mark: Lone signal tree.

[Latitude, $36^{\circ} 01' 51.57''$. Longitude, $94^{\circ} 35' 10.55''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spade	33 24 08.59	213 19 54.66	4.2945621
Kansas	137 13 41.87	317 05 38.30	4.4794358
Decatur	201 09 43.12	21 14 22.39	4.5146056

DECATUR, BENTON COUNTY, ARKANSAS.

On a timbered hill on west side and about one-fourth mile distant from Kansas City, Pittsburg and Gulf Railroad, at point about 4 miles south from town of Decatur. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt sunk in center of top.

[Latitude, $36^{\circ} 18' 20.83''$. Longitude, $94^{\circ} 27' 17.33''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Baptist	21 14 22.39	201 09 43.12	4.5146056
Kansas	75 33 45.91	255 21 00.82	4.5231238
Round Spring.....	104 01 35.00	283 46 25.04	4.5959206

KANSAS, CHEROKEE NATION.

On highest point of flat timbered ridge about 2 miles northwest from Kansas post-office. A local road running northwest passes 100 yards west of station. From point 56.70 chains on line N. $0^{\circ} 01' W$. between secs. 11 and 12, T. 20 N., R. 23 E., station may be reached by going due east 175 links. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 8 by 8 inches placed 22 inches in
U. S.
the ground, with copper bolt marked \triangle sunk in center of top.
G. S.

[Latitude, $36^{\circ} 13' 49.10''$. Longitude, $94^{\circ} 48' 50.68''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spade	345 50 55.29	165 54 43.46	4.5995950
Salina	69 06 09.42	249 58 38.63	4.3072366
Baptist	317 05 38.30	137 13 41.87	4.4794358
Decatur	255 21 00.82	75 33 45.91	4.5231238
Round Spring.....	161 20 08.78	341 17 45.50	4.2751402
Spavinaw	118 08 16.98	298 59 10.94	4.4206278

ROUND SPRING, CHEROKEE NATION.

On flat timbered ridge about 2 miles southeast from Round Spring, a well-known point on road between Spavinaw post-office and Southwest City, Missouri. From the corner common to secs. 7, 8, 17, and 18, T. 22 N., R. 23 E., station may be reached by going due south 943 feet, thence S. $48^{\circ} 15'$ W. 522 feet. Theodolite elevated 62 feet.

Station mark: A stone post, 24 by 7 by 7 inches placed 22 inches in the ground, with copper bolt sunk in center of top.

[Latitude, $36^{\circ} 23' 28.20''$. Longitude, $94^{\circ} 52' 52.64''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spavinaw.....	73 28 10.32	253 21 26.69	4.2481093
Harman.....	148 48 33.99	328 43 51.88	4.3576162
Decatur.....	283 46 25.04	104 01 35.00	4.5959206
Kansas.....	341 17 45.50	161 20 08.78	4.2751402
Whitewater.....	240 33 44.43	60 40 36.41	4.2972881
Salina.....	27 44 59.35	207 39 50.86	4.4469067

SPAVINAW, CHEROKEE NATION.

On highest point of rolling timbered hills, about 4 miles south from Spavinaw post-office. Road from Salina to Spavinaw passes about three-fourths of a mile west from station at point 4 miles from latter. From point 70 chains on line $0^{\circ} 02'$ W. between secs. 32 and 33, T. 22 N., R. 21 E., station may be reached by going S. $63^{\circ} E.$ 33.98 chains. Theodolite elevated 36 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt sunk in center of top.

[Latitude, $36^{\circ} 20' 44.23''$. Longitude, $95^{\circ} 04' 13.32''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Salina.....	348 34 55.09	168 36 29.33	4.3035865
Dog Creek.....	99 46 58.33	279 34 11.68	4.5144608
Wills.....	141 23 35.83	321 15 04.38	4.5350913
Harman.....	191 48 02.75	11 50 05.26	4.3991109
Round Spring.....	253 21 26.69	73 28 10.32	4.2481093
Kansas.....	298 59 10.94	118 08 16.98	4.4206278
Corbett.....	66 55 52.51	246 41 34.31	4.5953074

CORBETT, CHEROKEE NATION.

On high prairie hill about 8 miles west from Choteau, a town on Missouri, Kansas, and Texas Railway. The corner common to secs. 14, 15, 22, and 23, T. 20 N., R. 17 E., may be reached from station by going N. $72^{\circ} 46' W.$ 7.08 chains.

Station mark: A stone, post 25 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked \triangle U. S. sunk in center of top.
G. S.

[Latitude, $36^{\circ} 12' 21.12''$. Longitude, $95^{\circ} 28' 23.78''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Salina	275 50 54.04	96 06 44.50	4.6068569
Grand	327 46 03.56	147 55 54.08	4.6743218
Spavinaw	246 41 34.31	66 55 52.51	4.5953074
Dog Creek	190 35 36.48	10 37 09.80	4.3297503
McGinnis	121 10 15.32	301 01 44.48	4.4010233
Merchant	9 13 03.50	189 12 37.68	3.8340395
Barber	350 25 43.32	170 27 26.89	4.4231780
Weer	62 04 38.55	241 53 34.36	4.5037586

DOG CREEK, CHEROKEE NATION.

On highest point of timbered ridge at the head of Dog Creek, about 8 miles northwest from Pryor Creek, a town on Missouri, Kansas and Texas Railway. Road from Pryor Creek to Chelsea passes east of and near station. From line east between secs. 7 and 18, T. 22 N., R. 18 E., at 24.56 chains, station bears N. $13^{\circ} 16' W.$, 4.15 chains distant. Theodolite elevated 40 feet.

Station mark: A stone post, 25 by 8 by 8 inches, set 23 inches in the ground, with copper bolt marked \triangle U. S. sunk in center of top.
G. S.

[Latitude, $36^{\circ} 23' 42.51''$. Longitude, $95^{\circ} 25' 46.15''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Salina	304 42 34.65	124 56 53.98	4.6449413
Corbett	10 37 09.80	190 35 36.48	4.3297503
Harman	242 50 31.73	63 05 22.97	4.6221325
Wills	206 47 55.03	26 52 12.12	4.3772365
Spavinaw	279 34 11.68	99 46 58.33	4.5144608
Nowata	141 40 22.52	321 30 13.09	4.6125788
McGinnis	72 38 51.29	252 28 45.85	4.4263426
Weer	41 48 22.82	221 35 43.95	4.6830193

WILLS, CHEROKEE NATION.

On highest point of timbered ridge about 4 miles northeast from Catale, a post-office on St. Louis and San Francisco Railroad, and about 3 miles southwest from Mr. Grayson Wills's residence. Railroad passes very near station. Station is 21.10 chains north of corner between secs. 5 and 6, T. 24 N., R. 19 E. Theodolite elevated 36 feet.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 35' 12.54''$. Longitude, $95^{\circ} 18' 33.85''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spavinaw.....	321 15 04.38	141 23 35.83	4.5350913
Dog Creek.....	26 52 12.12	206 47 55.03	4.3772365
Harman.....	274 42 53.41	94 53 29.06	4.4251143
Bluejacket.....	216 05 24.85	36 12 06.89	4.4521138
Blue Mound.....	164 46 10.76	344 43 37.05	4.3851818
Nowata.....	106 48 23.19	286 33 54.42	4.5770317

HARMAN, CHEROKEE NATION.

On prairie end of a timbered ridge about 10 miles southeast of Vinita. Road from Vinita to Southwest City, Missouri, passes near station at point 10 miles from former. From the corner common to secs. 7, 12, 13, and 18, T. 24 N., R. 21 E., station may be reached by going west between secs. 12 and 13 28.85 chains, thence S. 44° W. 13.25 chains. Theodolite elevated 15 feet.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 34' 00.25''$. Longitude, $95^{\circ} 00' 47.15''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spavinaw.....	11 50 05.26	191 48 02.75	4.3991109
Wills.....	94 53 29.06	274 42 53.41	4.4251143
Round Spring.....	328 43 51.88	148 48 33.99	4.3576162
Seneca.....	243 16 13.46	63 28 22.72	4.5310247
Potato Hill.....	186 23 44.04	6 25 17.68	4.5418089
Bluejacket.....	158 44 49.93	338 40 54.68	4.4303314
Whitewater.....	288 27 17.83	108 38 53.07	4.4865362
Wasson.....	166 02 37.50	345 58 31.23	4.6256566

WHITEWATER, CHEROKEE NATION.

On flat timbered ridge on south side and 1 mile distant from White-water Creek at point 4 miles west from Arkansas line. Road from Spavinaw to Southwest City, Missouri, passes 1 mile south from station at point 6 or 7 miles from latter. From the corner common to secs. 7, 12, 13, and 18, T. 23 N., R. 24 E., station bears S. $56^{\circ} 02' W.$, 31.42 chains distant. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} U. S. \\ G. S. \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 28' 43.81''$. Longitude, $94^{\circ} 41' 18.96''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Round Spring.....	60 40 36.41	240 33 44.43	4.2972881
Harman.....	108 38 53.07	288 27 17.83	4.4865362
Seneca.....	183 04 02.77	3 04 34.91	4.3981625

SENECA, SENECA NATION.

On highest point of rolling timbered hills in T. 26 N., R. 24 E., about 6 miles northwest from Tiff City, Missouri. Road from Grove to Seneca, Missouri, passes east from station at point 10 or 11 miles from Seneca. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} U. S. \\ G. S. \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 42' 14.11''$. Longitude, $94^{\circ} 40' 25.03''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Whitewater.....	3 04 34.91	183 04 02.77	4.3981625
Harman.....	63 28 22.72	243 16 13.46	4.5310247
Bluejacket.....	103 58 24.72	283 42 17.89	4.6157967
Wasson.....	122 35 52.45	302 19 33.36	4.6811412
Potato Hill.....	126 20 57.25	306 10 19.12	4.5153808
Edwards.....	158 12 15.96	338 06 52.76	4.5548967
Peoria.....	190 41 33.33	10 43 14.93	4.3546688

PEORIA, PEORIA NATION (not occupied).

On a flat timbered ridge in T. 28 N., R. 25 E., 1 mile west from Missouri line, at point 6 miles north from Seneca, Missouri.

Station mark: A stone post, 25 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{smallmatrix} \text{U. S.} \\ \text{G. S.} \end{smallmatrix}$ sunk in center of top.

[Latitude, $36^{\circ} 54' 15.44''$. Longitude, $94^{\circ} 37' 35.44''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Seneca	10 43 14.93	190 41 33.33	4.3546688
Edwards	122 20 26.60	302 13 20.69	4.3166521

POTATO HILL, CHEROKEE NATION.

On prairie, at a point locally known as Potato Hill. Road from Blue-jacket to Miami passes southeast and very near station, at point 10 or 11 miles from former. From line east between secs. 29 and 32, T. 28 N., R. 22 E., at 48.26 chains from corner, station bears due north, 24.35 chains distant.

Station mark: A rock monument 6 feet high and 5 or 6 feet in diameter at base.

[Latitude, $36^{\circ} 52' 42.74''$. Longitude, $94^{\circ} 58' 10.54''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Seneca	306 10 19.12	126 20 57.25	4.5153808
Harman	6 25 17.68	186 23 44.04	4.5418089
Edwards	223 02 51.73	43 08 08.24	4.2804780
Wasson	114 26 36.83	294 20 55.61	4.1888109
Bluejacket.....	55 10 50.11	235 05 20.12	4.2207046

WASSON, CHEROKEE NATION.

On high prairie ridge about 3 miles west from Wasson, a switch on Missouri, Kansas and Texas Railway. From line N. $0^{\circ} 1' \text{ W.}$ between secs. 1 and 2, T. 28 N., R. 20 E., at 20.73 chains, station bears due west, 11.70 chains distant.

Station mark: A stone post, 25 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{smallmatrix} \text{U. S.} \\ \text{G. S.} \end{smallmatrix}$ sunk in center of top.

[Latitude, 36° 56' 09.70". Longitude, 95° 07' 38.75".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Edwards	254 19 49.12	74 30 47.56	4.4489361
Potato Hill	294 20 55.61	114 26 36.83	4.1888109
Bluejacket.....	358 24 33.48	178 24 44.15	4.2010781
Harman	345 58 31.23	166 02 37.50	4.6256566
Seneca	302 19 33.36	122 35 52.45	4.6811412

EDWARDS, CHEROKEE COUNTY, KANSAS.

On a prairie hill, locally known as Blue Mound, one-fourth mile north from line between Kansas and Quapaw Nation, Indian Territory, at point about 6 miles west of Baxter Springs, Kansas. Land is owned by Mr. Edwards.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt sunk in center of top.

[Latitude, 37° 00' 14.64". Longitude, 94° 49' 23.90".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Peoria.....	302 13 20.69	122 20 26.60	4.3166521
Seneca	338 06 52.76	158 12 15.96	4.5548967
Potato Hill	43 08 08.24	223 02 51.73	4.2804780
Bluejacket.....	48 47 01.38	228 36 14.68	4.5502216
Wasson	74 30 47.56	254 19 49.12	4.4489361

BLUEJACKET, CHEROKEE NATION.

On highest point of flat-topped timbered mountain or hill, locally known as Bluejacket Mountain. Hill is about 3 miles a little south of west from Bluejacket, a town on the Missouri, Kansas and Texas Railway. From line north between secs. 25 and 26, T. 27 N., R. 20 E., at 53.50 chains, station bears S. 25° 20' E., 23.45 chains distant. Theodolite elevated 55 feet.

Station mark: A stone post, 25 by 8 by 8 inches, placed 22 inches in the ground, with copper bolt marked + sunk in center of top.

G. S.

[Latitude, 36° 47' 34.48". Longitude, 95° 07' 20.96".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Wasson	178 24 44.15	358 24 33.48	4.2010781
Potato Hill	235 05 20.12	55 10 50.11	4.2207046
Wills.....	36 12 06.89	216 05 24.85	4.4521138
Blue Mound	91 26 48.76	271 17 31.65	4.3629821
Harman.....	338 40 54.68	158 44 49.93	4.4303314
Edwards	228 36 14.68	48 47 01.38	4.5502216
Seneca	283 42 17.89	103 58 24.72	4.6157967

BLUE MOUND, CHEROKEE NATION.

On the highest of several prairie hills, about 3 miles southwest from Miles post-office. The hill is locally known as Blue Mound. From corner common to secs. 21, 22, 27, and 28, T. 27 N., R. 18 E., station bears S. 47° W., and from corner common to secs. 20, 21, 28, and 29 station bears S. 74° 55' E.

Station mark: A tree wired up.

[Latitude, 36° 47' 52.36". Longitude, 95° 22' 51.09".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Bluejacket.....	271 17 31.65	91 26 48.76	4.3629821
Wills.....	344 43 37.05	164 46 10.76	4.3851818
Nowata.....	67 10 16.62	246 58 19.58	4.5090643
California	89 41 31.72	269 27 52.70	4.5302085
Timber Hill	117 20 59.76	297 08 25.37	4.5444066

TIMBER HILL, CHEROKEE NATION.

On timber-covered hill locally known as Timber Hill. Road from Barnesville to Coffeyville, Kansas, passes west and very near signal at point 9 miles from latter. From the corner of Ts. 27 and 28 N., Rs. 14 and 15 E., station may be reached by running east on seventh standard parallel 7.42 chains, thence south 32 links. Theodolite elevated 35 feet.

Station mark: A stone post, 24 by 8 by 8 inches, placed 21 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ + \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 56' 32.56''$. Longitude, $95^{\circ} 43' 48.40''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Blue Mound	297 08 25.37	117 20 59.76	4.5444066
Nowata	357 05 14.19	177 05 49.33	4.4571525
Panther	40 50 41.73	220 39 58.27	4.6105159
Caney	99 55 15.52	279 45 49.47	4.3736097
California	9 30 46.14	189 29 40.11	4.2177888

CALIFORNIA, CHEROKEE NATION.

On a high and rather flat prairie ridge, about 10 miles northwest of Nowata, a town on the St. Louis, Iron Mountain and Southern Railway. The corner common to secs. 25, 26, 35, and 36, T. 27 N., R. 14 E., may be reached from station by going S. $16^{\circ} 03'$ W. 52.78 chains to east and west line, thence west 40.015 chains.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in the ground, with a copper bolt marked $\begin{smallmatrix} \text{U. S.} \\ \text{G. S.} \end{smallmatrix}$ sunk in center of top.

[Latitude, $36^{\circ} 47' 44.27''$. Longitude, $95^{\circ} 45' 38.47''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Panther	58 39 48.52	238 30 11.99	4.4476258
Caney	134 42 12.40	314 33 53.38	4.4613481
Timber Hill	189 29 40.11	9 30 46.14	4.2177888
Nowata	341 14 06.14	161 15 47.06	4.1146470
Blue Mound	269 27 52.70	89 41 31.72	4.5302085

NOWATA, CHEROKEE NATION.

On high and rather flat prairie ridge, about 4 miles a little south of west of Nowata. Road from Nowata to Ringo passes 2 miles south-east of station at point 5 miles from former. From quarter corner between secs. 4 and 33, Ts. 25 and 26 N., R. 15 E., station bears west, 16.89 chains distant.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{smallmatrix} \text{U. S.} \\ \text{G. S.} \end{smallmatrix}$ sunk in center of top.

[Latitude, 36° 41' 04.27". Longitude, 95° 42' 49.76".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Blue Mound	246 58 19.58	67 10 16.62	4.5090643
Wills	286 33 54.42	106 48 23.19	4.5770317
Timber Hill	177 05 49.33	357 05 14.19	4.4571525
Panther	85 27 27.81	265 16 11.27	4.4505532
Skiatook	49 03 24.72	228 50 58.50	4.6160005
McGinnis	359 55 04.31	179 55 05.68	4.6032387
California	161 15 47.06	341 14 06.14	4.1146470
Dog Creek	321 30 13.09	141 40 22.52	4.6125788

M'GINNIS, CHEROKEE NATION.

In T. 21 N., R. 15 E., on highest point of a high ridge with scattering timber on it. This ridge extends along the west side of the Verdigris River, about 7 miles west from Claremore, a town on the St. Louis and San Francisco Railroad. Road from Claremore to Eli passes south of and 1 mile from the station. Theodolite elevated 34 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, 36° 19' 23.05". Longitude, 95° 42' 47.45".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Skiatook	112 38 48.35	292 26 23.94	4.5297992
Nowata	179 55 05.68	359 55 04.31	4.6032387
Weer	13 12 56.02	193 10 20.92	4.4585858
Tulsa	67 00 44.14	246 48 50.98	4.5147481
Panther	143 20 26.02	323 09 10.98	4.6740564
Merchant	313 53 07.78	134 01 12.44	4.4539608
Corbett	301 01 44.48	121 10 15.32	4.4010233
Dog Creek	252 28 45.85	72 38 51.29	4.4263426

TULSA, OSAGE NATION, OKLAHOMA TERRITORY.

On a very prominent prairie peak, about 5 miles northwest of Tulsa, a town on the St. Louis and San Francisco Railroad. Road from Tulsa to Cleveland, Arkansas, passes very near station. The corner common to secs. 7, 8, 17, and 18, T. 20 N., R. 12 E., may be reached

from station by going due west 29.39 chains to north-south line, thence north 50.61 chains.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt sunk in center of top.

[Latitude, $36^{\circ} 12' 26.84''$. Longitude, $96^{\circ} 02' 53.08''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Skiatook	177 16 22.22	357 15 52.98	4.4123352
McGinnis.....	246 48 50.98	67 00 44.14	4.5147481
Weer.....	302 39 44.40	122 49 00.53	4.4476239
Prairie	357 27 52.19	177 28 19.97	4.4267742

SKIATOOK, OSAGE NATION, OKLAHOMA TERRITORY.

On a small knoll on highest part of timbered ridge about 6 miles northwest from Skiatook, a post-office in the Cherokee Nation, Indian Territory. Road between Skiatook and Pawhuska passes about 300 yards north of station at point 6 miles from latter. The corner common to secs. 29, 30, 31, and 32, T. 23 N., R. 12 E., may be reached from station by going due east 60.56 chains to north-south line, thence south 32.79 chains. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 26' 24.31''$. Longitude, $96^{\circ} 03' 42.45''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Panther	186 50 15.58	6 51 27.02	4.3983118
Nowata.....	228 50 58.50	49 03 24.72	4.6160005
McGinnis.....	292 26 23.94	112 38 48.35	4.5297992
Tulsa.....	357 15 52.98	177 16 22.22	4.4123352
Monument.....	56 03 35.76	235 53 56.03	4.4684714
Tres Mounds.....	100 50 57.57	280 41 10.74	4.3984362
Pawhuska	146 13 44.48	326 06 03.07	4.5388769

PANTHER, OSAGE NATION, OKLAHOMA TERRITORY.

On highest part of ridge, with scattering timber on it, at the head of Panther Creek. Road between Bartlesville and Hominy, Indian Territory, passes 100 yards north of station at point about 8 miles from former. The corner common to secs. 4, 5, 8, and 9, T. 25 N.,

R. 12 E., may be reached by going due east 17.23 chains to north-south line, thence north 9.85 chains. Theodolite elevated 40 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 39' 50.27''$. Longitude, $96^{\circ} 01' 42.50''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Timber Hill	220 39 58.27	40 50 41.73	4.6105159
Nowata	265 16 11.27	85 27 27.81	4.4505532
Skiatook	6 51 27.02	186 50 15.58	4.3983118
California	238 30 11.99	58 39 48.52	4.4476258
McGinnis	323 09 10.98	143 20 26.02	4.6740564
Pawhuska	99 59 43.44	279 50 49.16	4.3530341
Spring Creek	139 35 51.39	319 27 51.99	4.4857711

CANEY, CHEROKEE NATION.

On highest point of prairie ridge about $3\frac{1}{2}$ miles southwest of Caney, Kansas. Road between Caney and Pawhuska, Oklahoma Territory, passes about 200 yards east of station at point $3\frac{1}{2}$ miles from former. The corner common to secs. 22, 23, 26, and 27, T. 29 N., R. 12 E., may be reached from station by going S. $86^{\circ} 30'$ E. 32.88 chains to north-south line, thence south 40 chains.

Station mark: A rock about 4 feet square, with a copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk into it.

[Latitude, $36^{\circ} 58' 43.64''$. Longitude, $95^{\circ} 59' 29.83''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Timber Hill	279 45 49.47	99 55 15.52	4.3736097
Panther	5 23 15.45	185 21 55.94	4.5451946
California	314 33 53.38	134 42 12.40	4.4613481
Spring Creek	63 18 40.66	243 09 19.79	4.4129408
Artillery	88 46 57.15	268 38 08.64	4.3372276

ARTILLERY, OSAGE NATION, OKLAHOMA TERRITORY.

On highest part of hill locally known as Artillery Mountain, about $3\frac{1}{2}$ miles southeast from Elgin, Kansas.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 58' 27.75''$. Longitude, $96^{\circ} 14' 08.50''$.]

To station—	Azimuth.	Back azimuth.	Log. distance
	° ' "	° ' "	Meters.
Caney	268 38 08.64	88 46 57.15	4.3372276
Spring Creek	6 56 31.64	186 55 58.67	4.0510469

SPRING CREEK, OSAGE NATION, OKLAHOMA TERRITORY.

On the highest part of a flat, timbered ridge (no timber within 100 yards of station). Road between Elgin, Kansas, and Pawhuska, Oklahoma Territory, passes about 1 mile west from station at a point 12 miles from former. Theodolite elevated 20 feet.

Station mark: A stone post, 24 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 52' 25.56''$. Longitude, $96^{\circ} 15' 03.39''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Artillery	186 55 58.67	6 56 31.64	4.0510469
Caney	243 09 19.79	63 18 40.66	4.4129408
Panther	319 27 51.99	139 35 51.39	4.4857711
Pawhuska	6 49 26.30	186 48 30.30	4.2908297
Flint	60 31 16.82	240 20 22.61	4.4930920

PAWHUSKA, OSAGE NATION, OKLAHOMA TERRITORY.

On high prairie hill about 4 miles a little north of east from Pawhuska, Oklahoma Territory. Road from Pawhuska, Oklahoma Territory, to Bartleville, Indian Territory, passes the foot of mountain on south side.

Station mark: A stone post, 25 by 8 by 8 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 41' 56.28''$. Longitude, $96^{\circ} 16' 36.90''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spring Creek	186 48 30.30	6 49 36.30	4.2908297
Panther	279 50 49.16	99 59 43.44	4.3530341
Skiatook	326 06 03.07	146 13 44.48	4.5388769
Tres Mounds	12 26 06.12	192 23 59.13	4.3914142
Flint	99 20 22.52	279 10 25.56	4.3997971

FLINT, OSAGE NATION, OKLAHOMA TERRITORY.

On highest point on long range of prairie hills locally known as the Flint Hills. Road running west from Pawhuska into the Kaw Reservation passes about 1 mile south from station at point where it crosses the Flint Hills (about 14 miles from Pawhuska).

Station mark: A stone post, 25 by 7 by 7 inches, placed 22 inches in the ground, with copper bolt marked $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ sunk in center of top.

[Latitude, $36^{\circ} 44' 07.30''$. Longitude, $96^{\circ} 33' 15.40''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Spring Creek	240 20 22.61	60 31 16.82	4.4930920
Pawhuska	279 10 25.56	99 20 22.52	4.3997971
Tres Mounds.....	325 08 17.04	145 16 05.45	4.5341085

TRES MOUNDS, OSAGE NATION, OKLAHOMA TERRITORY.

On the highest of three lone prairie hills locally known as Tres Mounds, about 3 miles north from Hominy post-office.

Station mark: A rock about 18 inches long, with $\begin{matrix} \text{U. S.} \\ \text{G. S.} \end{matrix}$ cut on it. Rock about 2 inches above ground.

[Latitude, $36^{\circ} 28' 56.02''$. Longitude, $96^{\circ} 20' 09.93''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Flint.....	145 16 05.45	325 08 17.04	4.5341085
Pawhuska	192 23 59.13	12 26 06.12	4.3914142
Skiatook	280 41 10.74	100 50 57.57	4.3984362
Monument	359 20 24.17	179 20 29.95	4.3249252

MONUMENT, OSAGE NATION, OKLAHOMA TERRITORY.

On a prairie hill 10 miles south of Hominy post-office. Road between Hominy and Tulsa, Indian Territory, goes within 1 mile of hill at point about 9 miles from Hominy, and then bears southeast. A "dim right hand" at this point passes near and east of the foot of the hill.

Station mark: A rock monument 7 feet high.

[Latitude, 36° 17' 30.50". Longitude, 96° 20' 00.18".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Tres Mounds.....	179 20 29.95	359 20 24.17	4.3249252
Skiatook	235 53 56.03	56 03 35.76	4.4684714

STILWELL, CHEROKEE NATION (not occupied).

On a high, timbered peak about 6 miles south from Stilwell. A higher, flat-topped, timbered mountain lies northeast from peak. From point 26.94 chains north from corner common to secs. 26, 27, 34, and 35, T. 15 N., R. 25 E., station bears east 9.01 chains distant.

Station mark: Lone signal tree.

[Latitude, 35° 44' 41.06". Longitude, 94° 37' 39.08".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Choate	63 22 56.29	243 16 30.33	4.2695959
Spade	155 02 57.29	335 00 11.15	4.2274522
Baptist	186 40 45.43	6 42 08.85	4.5048461

SALLISAW, CHEROKEE NATION.

On highest point on timbered ridge about 4 miles south from town of Sallisaw, on Kansas City, Pittsburg and Gulf Railroad and St. Louis, Iron Mountain and Southern Railway, about 2½ miles northeast from Brent post-office. The corner common to secs. 21, 22, 27, and 28, T. 11 N., R. 24 E., may be reached from station by going due north 3.23 chains to east-west line between secs. 21 and 28, thence east 38.43 chains. Theodolite elevated 34 feet.

Station mark: A stone post, 24 by 8 by 8 inches, placed 22 inches in the ground, with copper bolt marked U. S. G. S. sunk in center of top.

[Latitude, 35° 24' 18.13". Longitude, 94° 46' 08.22".]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Nebo.....	103 38 51.05	283 17 43.13	4.7532830
Choate	172 33 17.87	352 31 10.02	4.4710443
Redoak	41 26 25.25	221 12 37.16	4.7403246

WINDING STAIR, CHOCTAW NATION.

On the highest point of the Winding Stair Mountains, locally well known by the above name, reached from Talihina, a town on the main line of the St. Louis and San Francisco Railroad. The corner to secs. 32 and 33, T. 4 N., R. 23 E., may be reached from station by going due west 22.15 chains to north-south line, thence south 44.24 chains.

Station mark: Stump of tree $3\frac{1}{2}$ feet high, with rocks piled around it.

[Latitude, $34^{\circ} 46' 33.37''$. Longitude, $94^{\circ} 53' 49.05''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Dexter	68 01 12.78	247 43 32.00	4.7094046
Redoak	139 05 31.03	318 56 13.09	4.5768480
Cavanal	211 18 39.19	31 26 09.15	4.5834269
Poteau	245 59 43.58	66 13 40.12	4.6093287
Polecat	297 08 53.13	117 23 45.61	4.6524261
Kiamichi	334 39 24.31	154 42 19.59	4.2630071

DEXTER, CHOCTAW NATION.

About 4 miles a little north of west from Dexter post-office, on the St. Louis and San Francisco Railroad. The quarter corner between secs. 28 and 23, T. 2 N., R. 18 E., is 2,473 feet north and 938 feet west of station. Theodolite elevated on a stump cut off 18 feet above ground.

Station mark: Signal tree.

[Latitude, $34^{\circ} 36' 07.32''$. Longitude, $95^{\circ} 24' 52.95''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hewitt	92 08 49.08	271 58 10.85	4.4571430
Hartshorne	146 08 49.37	326 03 29.37	4.4091583
Redoak	205 13 54.57	25 22 22.06	4.7230759
Winding Stair	247 43 32.00	68 01 12.78	4.7094046
Kiamichi	267 00 22.13	87 20 55.81	4.7434931
Thunderbolt	310 37 44.32	130 50 35.53	4.6618115
Kosoma	40 10 38.45	220 03 43.28	4.4626567

KIAMICHI, CHOCTAW NATION.

On highest point on ridge locally known as the Kiamichi Mountains. The Talihina and Mena (Arkansas) road passes 5 or 6 miles north of station at point 22 miles from Talihina (George Field's residence).

From Mr. Field's a trail to Smithville crosses mountains at point $3\frac{1}{2}$ or 4 miles east from station. Fair traveling on horseback from this point up ridge to station. From point 23.15 chains north on line between secs. 19 and 20, T. 2 N., R. 24 E., station bears S. 76° E. 14.77 chains distant.

Station mark: A rock set in ground with U. S. G. S. cut in it.

[Latitude, $34^{\circ} 37' 35.85''$. Longitude, $94^{\circ} 48' 42.15''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Dexter	87 20 55.81	267 00 22.13	4.7434931
Winding Stair.....	154 42 19.59	334 39 24.31	4.2630071
Polecat	277 02 01.42	97 13 57.35	4.5101014
Hardscrabble	330 09 55.23	150 18 45.73	4.6834888
Thunderbolt.....	32 20 44.63	212 13 06.61	4.5872205

POLECAT, CHOCTAW NATION.

On the highest part of point locally known as Polecat Peak. The Talihina and Mena road passes about 4 miles north of the station at point where road crosses the boundary line between Arkansas and the Indian Territory. Mr. Jack Conley's residence is near this point on the Arkansas side. A trail leads from his place to the station. Station is 21.53 chains south and 13.77 chains east of corner to secs. 3, 4, 33, and 34, Ts. 1 and 2 N., R. 27 E.

Station mark: An oak tree with U. S. G. S. cut on it. All other trees cut from summit of hill.

[Latitude, $34^{\circ} 35' 25.42''$. Longitude, $94^{\circ} 27' 40.63''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hardscrabble	12 17 35.04	192 14 32.78	4.5882821
Thunderbolt.....	61 40 42.89	241 21 11.80	4.7788619
Kiamichi.....	97 13 57.35	277 02 01.42	4.5101014
Winding Stair	117 23 45.61	297 08 53.13	4.6524261

BASE LINE, CHOCTAW NATION (not occupied).

On a narrow rock ridge in southwest corner of sec. 31, T. 1 N., R. 24 E. To reach station take road running northwest from Smithville post-office until standard parallel is crossed, thence west up ridge till station is reached. From point 17.15 chains north, between secs. 31 and 36, on range line Rs. 23 and 24 E., T. 1 N., station may be reached by going east 7.61 chains.

Station mark: White oak signal tree.

[Latitude, 34° 30' 37.81". Longitude, 94° 49' 48.38%.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Thunderbolt	43 47 32.70	223 40 33.36	4.4377864
Hardscrabble	318 23 41.50	138 33 09.17	4.5881731

THUNDERBOLT, CHOCTAW NATION.

In the southwest corner of T. 2 S., R. 22 E., on highest point in the vicinity. A rough road from Noel's store to Mount Zion passes about 3 miles north from station at point 6 miles from latter. From corner of Ts. 2 and 3 N., Rs. 21 and 22 E., station may be reached by going east 44.13 chains on line between secs. 6 and 31, thence north 6.25 chains. Theodolite elevated 24 feet.

Station mark: A pine tree about 45 feet high with a copper bolt marked ^{U. S.}
_{G. S.} set in it about 4 feet above ground. All limbs were cut from tree except a small bunch left at the top for signal.

[Latitude, 34° 19' 55.23". Longitude, 95° 02' 09.82%.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Dexter	130 50 35.53	310 37 44.32	4.6618115
Kiamichi	212 13 06.61	32 20 44.63	4.5872205
Base line	223 40 33.36	43 47 32.70	4.4377864
Polecat	241 21 11.80	61 40 42.89	4.7788619
Hardscrabble	281 30 08.06	101 46 32.38	4.6591764
Garvin	346 04 42.70	166 08 33.69	4.6427670
Noel	40 06 55.36	220 00 06.08	4.4613892

HARDSCRABBLE, CHOCTAW NATION.

On the highest of several timbered hills. All timber was cut from summit of hill except an oak tree, which was left for signal. There is a small farm rented by Mr. Jacobs about three-fourths of a mile south from hill. Road from Hatton Gap, Arkansas, to Eagletown, Indian Territory, passes within 3 miles of station at point where road to Jacobs's farm leaves main road. From quarter corner between secs. 26 and 35, T. 3 S., R. 26 E., station bears S. 9° W., 57 chains distant.

Station mark: Copper bolt set in the lone oak signal tree.

[Latitude, $34^{\circ} 14' 56.52''$. Longitude, $94^{\circ} 33' 03.07''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Garvin	45 46 31.78	225 34 03.05	4.6799561
Thunderbolt	101 46 32.38	281 30 08.06	4.6591764
Base line	138 33 09.17	318 23 41.50	4.5881731
Kiamichi	150 18 45.73	330 09 55.23	4.6834888
Polecat	192 14 32.78	12 17 35.04	4.5882821

GARVIN, CHOCTAW NATION.

In T. 7 S., R. 23 E., on highest point of flat timbered ridge about 1 mile north from Garvin post-office. Road running north from Garvin passes about 40 yards west of station at a point 1 mile from former. Theodolite elevated 20 feet.

Station mark: A copper bolt set in a post-oak tree.

[Latitude, $33^{\circ} 56' 51.14''$. Longitude, $94^{\circ} 55' 18.63''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Noel	125 08 33.15	304 57 55.50	4.5526062
Thunderbolt	166 08 33.69	346 04 42.70	4.6427670
Hardscrabble	225 34 03.05	45 46 31.78	4.6799561

NOEL, CHOCTAW NATION.

On timbered hill about 5 miles southeast from Noel's store, which is in sec. 27, T. 4 S., R. 19 E. Road running southeast from store passes about 1 mile north from station. The highest timber was cut from summit of hill. The corner common to secs. 7, 8, 17, and 18, T. 5 S., R. 20 E., may be reached from station by going due west 21.70 chains to north-south line, thence south 24.45 chains. Theodolite elevated 20 feet.

Station mark: A lone tree.

[Latitude, $34^{\circ} 07' 56.53''$. Longitude, $95^{\circ} 14' 17.77''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Thunderbolt	220 00 06.08	40 06 55.36	4.4613892
Garvin	304 57 55.50	125 08 33.15	4.5526062

KOSOMA, CHOCTAW NATION.

On a bluff about $1\frac{1}{2}$ miles west of the wagon road from Kosoma to Tuskahoma and about 3 miles north of Kosoma. To reach station, take road northward from Kosoma for 2 miles, thence west by road which can be followed to top of ridge on which station is located. The corner common to secs. 3, 4, 9, and 10, T. 2 S., R. 16 E., may be reached from station by going N. $0^{\circ} 01' W.$ 0.01 chain, thence west 18.19 chains.

[Latitude, $34^{\circ} 24' 07.20''$. Longitude, $95^{\circ} 37' 05.90''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Hewitt	156 47 34.00	336 43 52.60	4.4025800
Dexter	220 03 43.28	40 10 38.45	4.4626567

POTEAU, CHOCTAW NATION.

On a high mountain 15 miles south of Cameron station; summit has considerable timber on it. From corner of secs. 5, 6, 7, and 8, T. 5 N., R. 27 E., station bears S. 19.12 chains and W. 17.90 chains.

Station mark: A lone oak tree, trimmed.

[Latitude, $34^{\circ} 55' 27.90''$. Longitude, $94^{\circ} 29' 25.12''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Winding Stair	66 13 40.12	245 59 43.58	4.6093287
Cavanal	133 25 57.21	313 19 28.38	4.3739002
Sugarloaf	190 17 55.18	10 18 41.69	4.0608964
Peak	212 58 14.23	33 02 18.15	4.2966365

SUGARLOAF, CHOCTAW NATION.

On a high and well-known mountain, 7 miles southeast of Cameron station, near the Arkansas line. All timber has been cleared from summit. From the corner of secs. 4 and 5, north boundary T. 6 N., R. 27 E., station may be reached by going south 14.62 chains, thence east 6.25 chains.

Station mark: Copper bolt set in a large flat ledge.

[Latitude, $35^{\circ} 01' 35.23''$. Longitude, $94^{\circ} 28' 03.98''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Poteau	10 18 41.69	190 17 55.18	4.0608964
Cavanal	104 25 23.59	284 18 07.67	4.2979498
Peak	238 45 43.46	58 49 01.09	4.0084853

PEAK, SEBASTIAN COUNTY, ARKANSAS.

On a sharp summit of Sugarloaf Mountain, about 6 miles northeast of the highest summit (Sugarloaf Peak).

Station mark: A rock monument.

[Latitude, $35^{\circ} 04' 26.71''$. Longitude, $94^{\circ} 22' 19.84''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Poteau	33 02 18.15	212 58 14.23	4.2966365
Sugarloaf	58 49 01.09	238 45 43.46	4.0084852
Cavanal	89 21 15.63	269 10 41.71	4.4464401

DEXTER, COOK COUNTY, TEXAS.

On the highest point of flat ridge N. 69° E. and 0.7 mile distant from the town of Dexter and on the south edge of the timber extending east from same town. Theodolite elevated 40 feet.

Station mark: A copper bolt set in a sandstone rock flush with the surface of the ground, from which bears (counting from the south point around to the west) the following trees: A post oak 14 inches in diameter, $33^{\circ} 35'$, distance 31.7 feet; a post oak 14 inches in diameter, $135^{\circ} 06'$, distance 27.8 feet; a post oak 10 inches in diameter, $189^{\circ} 02'$, distance 78.7 feet. Each tree is blazed and marked U. S. G. S. \triangle B. T.

[Latitude, $33^{\circ} 49' 14.91''$. Longitude, $96^{\circ} 57' 08.08''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Marietta	131 53 04.24	311 48 32.48	4.2259004
Cliff	224 58 33.06	45 06 10.47	4.4738536
Fink	273 30 48.99	93 38 36.99	4.3358726
Good	294 12 01.76	114 22 11.70	4.4911465
Morman Grove	320 23 13.12	140 31 41.84	4.5693849
County line	5 07 34.25	185 07 12.35	4.0551508
Provence	172 35 41.10	352 33 59.26	4.5589067

COUNTY LINE, COOK COUNTY, TEXAS.

On the summit of the eastern one of two timbered hills in Cook County, Texas. It bears N. 37° W., 5.4 miles from the town of Whitesboro in Grayson County, and S. 86° W., 1 mile from County Line post-office. Theodolite elevated 40 feet.

Station mark: A copper bolt set in a sandstone rock, from which bears (counting from the south point around to the west): A black jack tree 5 inches diameter, $71^{\circ} 09'$, distance 59.7 feet; a post oak tree 7 inches diameter, $151^{\circ} 54'$, distance 40.3 feet; a post oak tree 8 inches diameter, $188^{\circ} 54'$, distance 46.5 feet; a post oak tree 5 inches in diameter, $316^{\circ} 35'$, distance 40.5 feet. Each tree is blazed and marked U. S. G. S. Δ B. T.

[Latitude, $33^{\circ} 43' 07.86''$. Longitude, $96^{\circ} 57' 47.48''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Marietta.....	152 56 34.40	332 52 25.05	4.4032722
Dexter	185 07 12.35	5 07 34.25	4.0551508
Fink	246 12 30.66	66 20 39.94	4.3935107
Good.....	272 43 05.11	92 53 36.11	4.4670038
Morman Grove	304 59 30.94	125 08 20.82	4.4787932

FINK, GRAYSON COUNTY, TEXAS.

On a timbered hill that bears N. 50° W., distant 4.5 miles from the town of Pottsboro, Grayson County, Texas, and about 100 yards north of the road from Funk post-office to Bounds Ferry on Red River, and distant 2.4 miles westerly from Funk post-office. Theodolite elevated 40 feet.

Station mark: A copper bolt set in a sandstone rock placed flush with the surface of the ground, from which the following trees bear (counting from the south point around to the west): A post oak, 14 inches diameter, $90^{\circ} 04'$, distance 46.5 feet; a post oak, 12 inches diameter, $137^{\circ} 54'$, distance 38.6 feet; a post oak, 16 inches diameter, $259^{\circ} 12'$, distance 18.5 feet; a black-jack, 12 inches diameter, $356^{\circ} 49'$, distance 49.3 feet. Each tree is blazed and marked "U. S. G. S. Δ B. T."

[Latitude, $33^{\circ} 48' 31.01''$. Longitude, $96^{\circ} 43' 07.12''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Good.....	329 53 02.91	149 55 25.45	4.1194420
County line.....	66 20 39.94	246 12 30.66	4.3935107
Dexter	93 38 36.99	273 30 48.99	4.3358726
Cliff.....	178 36 32.86	358 36 21.04	4.3500409

GOOD, GRAYSON COUNTY, TEXAS.

On the summit of a flat ridge between Pottsboro and Sherman, bearing S. 17° E., distant 3.8 miles from the town of Pottsboro, and on the premises of the "widow Good," about 50 yards east of the road between Pottsboro and Sherman. Theodolite elevated 20 feet.

Station mark: A copper bolt set in a sandstone rock which is flush with the surface of the ground, from which the southwest corner of widow Good's house bears (counting from the south point around to west) $349^{\circ} 18'$; distance, 142.6 feet.

[Latitude, $33^{\circ} 42' 21.29''$. Longitude, $96^{\circ} 38' 50.59''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
Mormon Grove	16 20 39.89	196 18 59.97	4.2183856
County line.....	92 53 36.11	272 43 05.11	4.4670038
Dexter	114 22 11.70	294 12 01.76	4.4911465
Fink	149 55 25.45	329 53 02.91	4.1194420
Cliff.....	168 05 12.03	248 02 37.31	4.5380660

MORMON GROVE, GRAYSON COUNTY, TEXAS.

On the premises of J. D. Hall, 550 feet northeast of Mormon Grove post-office, which is S. $45\frac{1}{4}^{\circ}$ W., distant 7.18 miles from the courthouse at Sherman. The station is in a cultivated field about 25 yards north of Hall's peach orchard.

Station mark: A copper bolt set in a rock placed 2 feet below the surface of the ground; also marked by a cross in the vertical line through center of copper bolt cut in a rock placed flush with the surface of the ground, from which the northeast corner of an implement house bears (counting from the south point to west) $61^{\circ} 54'$; distance, 151.9 feet.

[Latitude, $33^{\circ} 33' 46.27''$. Longitude, $96^{\circ} 41' 50.98''$.]

To station—	Azimuth.	Back azimuth.	Log. distance.
	° ' "	° ' "	Meters.
County line.....	125 08 20.82	304 59 30.94	4.4787932
Dexter	140 31 41.84	320 23 13.12	4.5693849
Good.....	196 18 59.97	16 20 39.89	4.2183856

SPIRIT LEVELING.

The elevations in the following list are based on bench mark XLI of the United States Coast and Geodetic Survey, located at Fort Smith, Arkansas. This mark was placed in 1889, and is a copper bolt leaded in the west wall of the United States jail (brick). The bolt is in the first course above the limestone base, and about 1 meter above the ground. It is in the fifth brick from the panel formed by the side of the building and the brick ventilator. The jail is a new pressed-brick addition to the old United States building. A cross was cut in the end of the bolt, and the intersection of the lines forming the cross is the bench mark. The letters "U. S. B. M." were cut in the base stone immediately below the bolt. Height above the mean level of the Gulf, 446.29 feet.

From this bench mark two lines of levels were run, one over the St. Louis, Iron Mountain and Southern Railway to Wagoner, Indian Territory; then south over the Missouri, Kansas and Texas Railway to milepost No. 519, where a closure of 0.430 feet was made on the other line of levels which had been run from Fort Smith, Arkansas, over the St. Louis and San Francisco Railroad to Wister, Indian Territory; then west over the Choctaw, Oklahoma and Gulf Railroad to South McAlester, Indian Territory; then north over the Missouri, Kansas and Texas Railway to mile pole No. 519. The level lines from Fort Smith, Arkansas, to Wagoner, Indian Territory, and Fort Smith, Arkansas, to South McAlester, Indian Territory, were run by two levelmen over each line. Messrs. J. Phelan and C. H. Hickman started the line from Fort Smith, Arkansas, to Wagoner, Indian Territory, but were afterwards relieved by Messrs. A. F. Hassan and R. Coe. Messrs. R. Coe and G. A. Purington started the line from Fort Smith, Arkansas, to South McAlester, Indian Territory, but Mr. Coe was afterwards relieved by Mr. H. C. McCluer. The remainder of the railroad levels were run by a single levelman using two rods. From Wister, Indian Territory, Mr. H. C. McCluer ran south over the St. Louis and San Francisco Railroad to Paris, Texas; and then west over the Texas and Pacific Railway to Sherman, Texas, where a closure of 0.915 feet was made with line run by Messrs. G. A. Purington and W. R. Manning south over the Missouri, Kansas and Texas Railway to Sherman, Texas. Starting from Denison, Texas, on the Missouri, Kansas and Texas Railway, Messrs. R. Coe and R. T. Carnall ran west over said line to Gainesville, Texas. From that point the line was carried north by Messrs. R. Coe and A. F. Hassan over the Gulf, Colorado and Santa Fe Railway to Oklahoma City, Oklahoma Territory; then east by Mr. R. Coe over the Choctaw, Oklahoma and Gulf Railroad to mile pole No. 66, near Dale, Oklahoma Territory,

where a closure of 0.146 feet was made with line brought west by Mr. E. L. Faison from South McAlester, Indian Territory, over the Choctaw, Oklahoma and Gulf Railroad. From Oklahoma City, Oklahoma Territory, Mr. R. Coe ran west over the Choctaw, Oklahoma and Gulf Railroad to Fort Reno, Oklahoma Territory, and then south from El Reno Junction, Oklahoma Territory, over the Chicago, Rock Island and Pacific Railway through Indian Territory to the Red River. Then returning a few miles north to the intersection of the railway with the first standard parallel south, of the Chickasaw Survey, he ran east along the said parallel to the Indian meridian, where he made a closure of 0.566 feet on the line of levels extended by Mr. J. H. Carlock westward from the Gulf, Colorado and Santa Fe Railway to the Indian meridian. Elevations of the portions of this circuit that lay in Oklahoma Territory have been included by Mr. J. H. Renshaw, topographer, in the report for the fiscal year 1897-98.

From Wagoner, Indian Territory, levels were run north by Messrs. A. F. Hassan, C. B. Odell, and R. Coe, over the Missouri, Kansas and Texas Railway to Chetopah, Kansas, and from there west by Mr. R. Coe, over the Missouri Pacific Railway to Coffeyville, Kansas, making a closure of 1.009 feet on line run north from Wagoner, Indian Territory, by Mr. C. B. Odell over the St. Louis, Iron Mountain and Southern Railway to Coffeyville, Kansas. Levels were also run on the St. Louis and San Francisco Railroad from Sapulpa, Indian Territory, to its intersection with the Indian Territory-Missouri line, crossing the St. Louis, Iron Mountain and Southern Railway at Claremore, Indian Territory, and the Missouri, Kansas and Texas Railway at Vinita, Indian Territory; along the Kansas City, Pittsburg and Gulf Railroad, from the Indian Territory-Arkansas line, near Page, Indian Territory, north to Siloam Springs, Arkansas, crossing the St. Louis and San Francisco Railroad near Poteau, Indian Territory, and St. Louis, Iron Mountain and Southern Railway near Sallisaw, Indian Territory.

It will be seen from the above résumé that Indian Territory has been well controlled by double-rodged lines along the various railroads, all so run as to form closed circuits, which have all closed quite satisfactorily considering the conditions of extreme heat and cold, as well as high winds, which existed at various times during the work. These lines along the railroads were used as precise levels, and all land lines were connected to these at the points of intersection.

All permanent bench marks were stamped to the nearest foot.

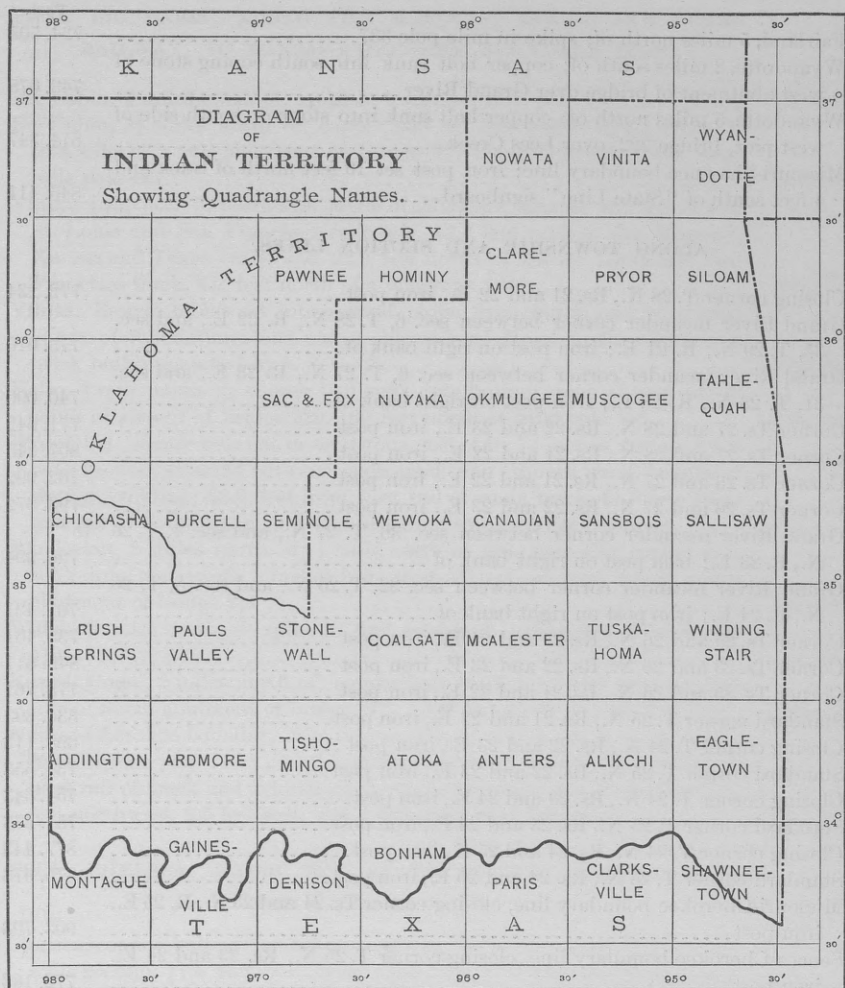


FIG. 1.—Map of Indian Territory showing quadrangle names.

WYANDOTTE QUADRANGLE.

Mr. A. F. Hassan ran the railroad levels. Mr. George Nick was attached to the subdivision and topographic party of Mr. D. C. Harrison, and Messrs. W. E. Earle and H. L. Muldrow, jr., to Mr. R. H. McKee's party.

FROM AFTON, ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD, TO MISSOURI-SHAWNEE BOUNDARY LINE.

Afton, $\frac{1}{2}$ mile north of; copper bolt sunk into coping stone on south side of west abutment of bridge 245, over Horse Creek.....	773.867
Fairland, 1 mile south of; spike in mile pole 343.....	819.048

Feet.

	Feet.
Fairland, 5 miles north of; spike in mile pole 337.....	734. 505
Wyandotte, 2 miles south of; copper bolt sunk into south coping stone of west abutment of bridge over Grand River	743. 078
Wyandotte, 5 miles north of; copper bolt sunk into stone on south side of west pier, bridge 222, over Lees Creek	814. 347
Missouri-Shawnee boundary line; iron post set 10 feet north of track and 4 feet south of "State Line" signboard.....	846. 411

ALONG TOWNSHIP AND SECTION LINES.

Closing corner T. 28 N., Rs. 21 and 22 E., iron post.....	772. 234
Grand River meander corner between sec. 6, T. 28 N., R. 22 E., and sec. 35, T. 29 N., R. 21 E.; iron post on right bank of.....	773. 010
Grand River meander corner between sec. 6, T. 27 N., R. 23 E., and sec. 31, T. 28 N., R. 23 E.; iron post on right bank of.....	740. 090
Corner Ts. 27 and 28 N., Rs. 22 and 23 E., iron post	771. 642
Corner Ts. 27 and 28 N., Rs. 21 and 22 E., iron post	807. 345
Corner Ts. 26 and 27 N., Rs. 21 and 22 E., iron post	762. 992
Corner Ts. 26 and 27 N., Rs. 22 and 23 E., iron post	793. 672
Grand River meander corner between sec. 36, T. 27 N., and sec. 1, T. 26 N., R. 23 E.; iron post on right bank of	726. 994
Grand River meander corner between sec. 32, T. 26 N., and sec. 5, T. 25 N., R. 24 E.; iron post on right bank of.....	701. 431
Corner Ts. 25 and 26 N., Rs. 23 and 24 E., iron post	735. 451
Corner Ts. 25 and 26 N., Rs. 22 and 23 E., iron post	849. 611
Corner Ts. 25 and 26 N., Rs. 21 and 22 E., iron post	778. 761
Standard corner T. 25 N., Rs. 21 and 22 E., iron post.....	834. 693
Closing corner T. 24 N., Rs. 22 and 23 E., iron post	698. 113
Standard corner T. 25 N., Rs. 22 and 23 E., iron post.....	734. 553
Closing corner T. 24 N., Rs. 23 and 24 E., iron post.....	754. 643
Standard corner T. 25 N., Rs. 23 and 24 E., iron post.....	751. 273
Closing corner T. 24 N., Rs. 24 and 25 E., iron post.....	877. 443
Standard corner T. 25 N., Rs. 24 and 25 E., iron post.....	875. 973
Missouri-Cherokee boundary line, closing corner Ts. 24 and 25 N., R. 25 E., iron post.....	903. 793
Seneca-Cherokee boundary line, closing corner T. 25 N., Rs. 23 and 24 E., iron post.....	772. 163
Seneca-Cherokee boundary line, closing corner T. 25 N., Rs. 24 and 25 E., iron post.....	832. 883
Seneca-Cherokee boundary line, intersection of the, with the west boundary line of Missouri, T. 25 N., R. 25 E., of Indian Territory Survey, iron post.....	751. 113
Arkansas-Cherokee boundary line, closing corner Ts. 23 and 24 N., R. 25 E., iron post.....	1, 030. 273
Corner Ts. 23 and 24 N., Rs. 24 and 25 E., iron post.....	1, 029. 483
Corner Ts. 23 and 24 N., Rs. 23 and 24 E., iron post.....	900. 453
Corner Ts. 23 and 24 N., Rs. 22 and 23 E., iron post.....	893. 849

VINITA QUADRANGLE.

The railroad levels were run by Messrs. R. Coe, C. B. Odell, and A. F. Hassan. Mr. C. B. Odell had charge of an independent level party. Mr. G. Nick was attached to the subdivision and topographic party of Mr. D. C. Harrison, and Messrs. E. W. Hill, W. E. Earle, and A. F. Hassan were with Mr. R. H. McKee's party.

FROM BIG CABIN, ALONG THE MISSOURI, KANSAS AND TEXAS
RAILWAY, TO KANSAS-CHEROKEE BOUNDARY LINE.

	Feet.
Big Cabin, 2 miles north of; spike in telegraph mile pole 445.....	690. 998
Big Cabin, $3\frac{3}{4}$ miles north of; copper bolt set into angle coping stone of east side of north abutment of bridge 227 over Whiteoak Creek near mile pole 443.....	667. 232
Vinita; iron post in northwest angle of Missouri, Kansas and Texas and St. Louis and San Francisco railroads; 13.8 feet west of the Missouri, Kansas and Texas track and 22.9 feet north of the St. Louis and San Francisco track, 4.2 feet north of a telegraph pole	695. 216
Vinita; bronze tablet set into second stone from north end of second course of foundation stone above sidewalk of Hotel Cobb, which is a brick building owned by S. S. Cobb.....	702. 469
Kelso, $\frac{1}{4}$ mile north of; copper bolt sunk into bottom stone of east side of south abutment of bridge 220, 160 feet north of mile pole 433.....	748. 998
Bluejacket; square hole cut in sandstone post, 4 by 13 inches, surface flush with ground, situated between main track and "house track," south of station building; 22.9 feet from west rail of main track, 21.5 feet from east rail of house track, and 42.4 feet from south end of building.....	773. 565
Bluejacket, 2 miles north of; $\frac{1}{4}$ mile north of mile pole 425; copper bolt sunk into seat stone, 8 inches from west edge of, on west side of south abutment of bridge 217	761. 622
Welch, 2 miles north of; spike in first telegraph pole south of mile pole 419	852. 864
Russell Creek, 2 miles north of; copper bolt sunk into first step on east side of north abutment of bridge 213, 1,400 feet north of mile pole 414..	798. 416
Kansas-Cherokee boundary line, intersection of railroad with; square hole in sandstone post 14 by 14 by 5 inches, flush with ground, 49.6 feet from west rail of track and referenced by three posts situated as follows: 3.4 feet northwest, 2.5 feet east, and 4 feet southwest from stone	835. 495

FROM CHELSEA, ALONG THE ST. LOUIS AND SAN FRANCISCO
RAILROAD, TO ALBIA.

Chelsea; copper bolt in sandstone post 8 by 10 by 22 inches, buried flush with ground, 11.5 feet from northwest corner of station building and 15.6 feet from east rail of track	715. 147
Chelsea; bronze tablet set into northeast corner of stone building, corner of Olive and Fifth streets, used as a bank building	717. 951
Chelsea, 6 miles northeast of; spike in milepole 375	798. 641
Vinita, 7 miles southwest of; spike in milepole 369	760. 078
Vinita, 1 mile west of; copper bolt sunk into southwest coping stone of south abutment of bridge over Big Cabin Creek	676. 091
Albia, $1\frac{1}{3}$ miles southwest of; spike in milepole 356	694. 676

ALONG TOWNSHIP LINES.

Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 17 and 18 E., iron post.....	900. 945
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 18 and 19 E., iron post.....	934. 823
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 19 and 20 E., iron post.....	905. 385

Feet.

Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 20 and 21 E., iron post.....	827.024
Kansas-Cherokee boundary line, iron post set by the side of the "Zero" milepost and 400 feet west of the Neosho or Grand River.....	780.029
Standard corner T. 29 N., Rs. 20 and 21 E., iron post.....	833.01
Closing corner T. 28 N., Rs. 20 and 21 E., iron post.....	887.803
Standard corner T. 29 N., Rs. 19 and 20 E., iron post.....	945.791
Closing corner T. 28 N., Rs. 19 and 20 E., iron post.....	894.993
Standard corner T. 29 N., Rs. 18 and 19 E., iron post.....	956.136
Closing corner T. 28 N., Rs. 18 and 19 E., iron post.....	894.876
Standard corner T. 29 N., Rs. 17 and 18 E., iron post.....	827.136
Closing corner T. 28 N., Rs. 17 and 18 E., iron post.....	845.136
Corner Ts. 27 and 28 N., Rs. 17 and 18 E., iron post.....	803.09
Corner Ts. 27 and 28 N., Rs. 18 and 19 E., iron post.....	823.876
Corner Ts. 27 and 28 N., Rs. 19 and 20 E., iron post.....	956.03
Corner Ts. 27 and 28 N., Rs. 20 and 21 E., iron post.....	791.09
Corner Ts. 26 and 27 N., Rs. 20 and 21 E., iron post.....	772.0
Corner Ts. 26 and 27 N., Rs. 19 and 20 E., iron post.....	755.931
Corner Ts. 26 and 27 N., Rs. 18 and 19 E., iron post.....	827.232
Corner Ts. 26 and 27 N., Rs. 17 and 18 E., iron post.....	777.0
Corner Ts. 25 and 26 N., Rs. 17 and 18 E., iron post.....	733.31
Corner Ts. 25 and 26 N., Rs. 18 and 19 E., iron post.....	794.337
Corner Ts. 25 and 26 N., Rs. 19 and 20 E., iron post.....	718.291
Corner Ts. 25 and 26 N., Rs. 20 and 21 E., iron post.....	739.321
Closing corner T. 24 N., Rs. 21 and 22 E., iron post.....	821.033
Standard corner T. 25 N., Rs. 20 and 21 E., iron post.....	673.056
Closing corner T. 24 N., Rs. 20 and 21 E., iron post.....	716.113
Standard corner T. 25 N., Rs. 19 and 20 E., iron post.....	686.426
Closing corner T. 24 N., Rs. 19 and 20 E., iron post.....	696.767
Standard corner T. 25 N., Rs. 18 and 19 E., iron post.....	909.0
Closing corner T. 24 N., Rs. 18 and 19 E., iron post.....	895.888
Standard corner T. 25 N., Rs. 17 and 18 E., iron post.....	785.896
Corner Ts. 23 and 24 N., Rs. 17 and 18 E., iron post.....	709.701
Corner Ts. 23 and 24 N., Rs. 18 and 19 E., iron post.....	840.127
Corner Ts. 23 and 24 N., Rs. 19 and 20 E., iron post.....	682.269
Witness corner to Ts. 23 and 24 N., Rs. 20 and 21 E., iron post.....	656.663
Corner Ts. 23 and 24 N., Rs. 21 and 22 E., iron post. (This bench mark is just north of the Vinita quadrangle and on the Missouri, Kansas and Texas Railway.).....	820.059
Chetopah, Kansas; bronze tablet set in center of corner stone on east side of entrance and in first course of stone above foundation of public-school building.....	823.701

NOWATA QUADRANGLE.

Mr. C. B. Odell ran the railroad levels; Mr. W. S. D. Moore had an independent level party; Messrs. G. Nick and J. P. Thayer were attached to the subdivision and topographic party of Mr. D. C. Harrison, and Mr. A. F. Hassan was with Mr. R. H. McKee's party.

FROM TALALA, ALONG ST. LOUIS, IRON MOUNTAIN AND SOUTH-
ERN RAILWAY, TO SEMINOLE.

	Feet.
Talala; copper bolt in sandstone post 7 by 9 by 18 inches, buried flush with ground, 8.6 feet from southeast corner of station building	683. 305
Watova, 2 miles south of; telegraph milepole 639	693. 476
Nowata, 2 miles south of; spike in second telegraph pole north of milepole 645	703. 138
Nowata; copper bolt in sandstone post 8 by 8 by 26 inches, buried flush with ground, 8.7 feet south from southeast corner of station building and 14 feet from track	693. 5
Nowata; bronze tablet set into sandstone sill, northeast corner of J. H. Bartlett's "City Dry Goods Store"	702. 419
Nowata, 3 miles north of; square hole cut into second capstone from east end of center pier bridge over California Creek	660. 791
Lenapah, 3 miles north of; spike in milepole 654	750. 384
Seminole, 3 miles south of; spike in milepole 660	707. 496
Seminole, 3 miles south of; spike in milepole 666	716. 356
Seminole, 4 miles north of; copper bolt sunk into sandstone post 6 by 8 by 24 inches, buried flush with ground, 8.8 feet west of track and 1.4 feet from post marking intersection of railroad and Kansas-Cherokee boundary line, which is near thirty-fourth milepost of boundary line ..	730. 504

ALONG TOWNSHIP AND SECTION LINES.

Kansas-Cherokee boundary line, closing corner Osage-Cherokee boundary line, T. 29 N., R. 12 E., iron post	941. 681
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 12 and 13 E., iron post	719. 136
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 13 and 14 E., iron post	806. 136
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 14 and 15 E., iron post	872. 951
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 15 and 16 E., iron post	735. 205
Kansas-Cherokee boundary line, closing corner T. 29 N., Rs. 16 and 17 E., iron post	757. 205
Standard corner T. 29 N., Rs. 16 and 17 E., iron post	808. 136
Closing corner T. 28 N., Rs. 16 and 17 E., iron post	737. 136
Standard corner T. 29 N., Rs. 15 and 16 E., iron post	713. 354
Closing corner T. 28 N., Rs. 15 and 16 E., iron post	758. 337
Standard corner T. 29 N., Rs. 14 and 15 E., iron post	946. 136
Closing corner T. 28 N., Rs. 14 and 15 E., iron post	919. 919
Standard corner T. 29 N., Rs. 13 and 14 E., iron post	781. 136
Closing corner T. 28 N., Rs. 13 and 14 E., iron post	740. 226
Standard corner T. 29 N., Rs. 12 and 13 E., iron post	704. 136
Closing corner T. 28 N., Rs. 12 and 13 E., iron post	741. 419
Osage-Cherokee boundary line, closing corner Ts. 28 and 29 N., R. 12 E., iron post	793. 136
Osage-Cherokee boundary line, closing corner Ts. 27 and 28 N., R. 12 E., iron post	692, 269
Corner Ts. 27 and 28 N., Rs. 12 and 13 E., iron post	688. 011
Corner Ts. 27 and 28 N., Rs. 13 and 14 E., iron post	799. 349

	Feet.
Corner Ts. 27 and 28 N., Rs. 14 and 15 E., iron post	845.989
Triangulation station; northeast part of NW. $\frac{1}{4}$ sec. 5, T. 28 N., R. 15 E., copper bolt in stone, 20 feet left of signal tower	968.497
Corner Ts. 27 and 28 N., Rs. 15 and 16 E., iron post	795.869
Corner Ts. 27 and 28 N., Rs. 16 and 17 E., iron post	707.841
Corner Ts. 26 and 27 N., Rs. 16 and 17 E., iron post	738.937
Corner Ts. 26 and 27 N., Rs. 15 and 16 E., iron post	688.804
Corner Ts. 26 and 27 N., Rs. 14 and 15 E., iron post	895.509
Corner Ts. 26 and 27 N., Rs. 13 and 14 E., iron post	813.747
Corner Ts. 26 and 27 N., Rs. 12 and 13 E., iron post	667.491
Osage-Cherokee boundary line, closing corner Ts. 26 and 27 N., R. 12 E., iron post	672.977
Osage-Cherokee boundary line, closing corner Ts. 25 and 26 N., R. 12 E., iron post	922.966
Corner Ts. 25 and 26 N., Rs. 12 and 13 E., iron post	654.498
Corner Ts. 25 and 26 N., Rs. 13 and 14 E., iron post	717.625
Corner Ts. 25 and 26 N., Rs. 14 and 15 E., iron post	761.842
Triangulation signal; south central part of SW. $\frac{1}{4}$ sec. 33, T. 26 N., R. 15 E., copper bolt set in stone 6 inches square	903.057
Corner Ts. 25 and 26 N., Rs. 15 and 16 E., iron post	690.122
Corner Ts. 25 and 26 N., Rs. 16 and 17 E., iron post	641.31
Standard corner T. 25 N., Rs. 16 and 17 E., iron post	648.0
Closing corner T. 24 N., Rs. 16 and 17 E., iron post	636.232
Standard corner T. 25 N., Rs. 15 and 16 E., iron post	695.105
Closing corner T. 24 N., Rs. 15 and 16 E., iron post	685.16
Standard corner T. 25 N., Rs. 14 and 15 E., iron post	811.02
Closing corner T. 24 N., Rs. 14 and 15 E., iron post	807.88
Standard corner T. 25 N., Rs. 13 and 14 E., iron post	626.605
Closing corner T. 24 N., Rs. 13 and 14 E., iron post	627.995
Standard corner T. 25 N., Rs. 12 and 13 E., iron post	733.698
Closing corner T. 24 N., Rs. 12 and 13 E., iron post	731.888
Osage-Cherokee boundary line, closing corner Ts. 24 and 25 N., R. 12 E., iron post	840.708
Osage-Cherokee boundary line, closing corner Ts. 23 and 24 N., R. 12 E., iron post	879.665
Corner Ts. 23 and 24 N., Rs. 12 and 13 E., iron post	790.033
Corner Ts. 23 and 24 N., Rs. 13 and 14 E., iron post	613.463
Corner Ts. 23 and 24 N., Rs. 14 and 15 E., iron post	694.357
Corner Ts. 23 and 24 N., Rs. 15 and 16 E., iron post	763.796
Corner Ts. 23 and 24 N., Rs. 16 and 17 E., iron post	749.749

The following bench marks are situated just north of the Nowata quadrangle, and are on the Missouri Pacific and St. Louis, Iron Mountain and Southern Railways:

	Feet.
Edna, Labette County, Kansas; bronze tablet in middle of bottom stone of north column of stone store building, owned by G. W. Reason, and used as a grocery by Arnold Bros.	974.0497
Coffeyville, Kansas; copper bolt in sandstone post, 6 by 8 by 24 inches flush with ground near Missouri Pacific station building, and 1.8 feet south of station, 20.1 feet north of north rail.	743.778
Coffeyville, Kansas; bronze tablet on base of pilaster of red sandstone in the Ried Building, on the southeast corner of Walnut and Ninth streets, and in northwest corner of building.	731.372

CLAREMORE QUADRANGLE.

Mr. C. B. Odell ran the railroad levels. Messrs. W. S. D. Moore and C. B. Odell had independent level parties. Mr. A. F. Hassan was attached to the subdivision and topographic party of Mr. R. H. McKee, and Mr. J. P. Thayer to Mr. D. C. Harrison's party.

FROM INOLA, ALONG THE ST. LOUIS, IRON MOUNTAIN AND
SOUTHERN RAILWAY, TO OOLOGAH.

	Feet.
Inola; copper bolt sunk into sandstone post, 4 by 6 by 24 inches, buried flush with surface and 10.2 feet from the southeast corner of station building	599.821
Inola, 6 miles north of; spike in mile pole 609.....	601.201
Claremore; bronze tablet set into top course of foundation stone of First National Bank Building, on the southwest corner of same. Building situated on the northeast corner of Third street and Wichita avenue ...	599.077
Claremore; copper bolt sunk into sandstone post 8 by 8 by 18 inches, 9.1 feet south from southeast corner of station building, 12.6 feet west of St. Louis, Iron Mountain and Southern track.....	607.01
Claremore, 1 mile north of; copper bolt sunk into sandstone post 6 by 9 by 20 inches, flush with surface, 7.8 feet east of St. Louis, Iron Mountain and Southern Railway, and 7.8 feet west of St. Louis and San Francisco Railroad tracks, 27.6 feet north of the intersection of these roads...	611.164
Sageeyah; (+) cross on sandstone post 9 by 9 by 18 inches, 10 feet west of track and 12 feet south from southeast corner of station building	643.515
Sageeyah, 1 mile north of; "U. S. B. M." stamped in southeast iron tube near center of bridge structure over Verdigris River	592.489
Oologah; copper bolt sunk into stone 7 by 9 by 17 inches, 10.7 feet from south end of station and 12 feet from track, and buried flush with surface	654.614

FROM CLAREMORE, ALONG THE ST. LOUIS AND SAN FRANCISCO
RAILROAD, TO TULSA.

Claremore, 6 miles north of; spike in mile pole 392	687.785
Claremore; St. Louis and San Francisco Railroad station; copper bolt sunk into sandstone post 8 by 8 by 20 inches, 10.4 feet from northwest corner of building, 18.7 feet east of track and buried flush with surface	598.687
Verdigris; spike in mile pole 404.....	619.376
Catoosa, 1 mile north of; copper bolt sunk into capstone on south side of east pier, bridge over Verdigris River.....	570.724
Catoosa; spike in mile pole 410, opposite station building.....	617.144
Catoosa, 3 miles south of; spike in mile pole 413:.....	738.043
Tulsa, 6 miles north of; square hole cut in first capstone on south end of east abutment, bridge over Mingo Creek.....	601.568
Tulsa; copper bolt sunk into sandstone post 8 by 8 by 22 inches, 18.6 feet west of track and 12.7 feet from southeast corner of station building and buried flush with surface	695.127
Tulsa; bronze tablet set into southwest corner stone of second course above sidewalk of stone building known as the Lynch Building.....	708.038
Tulsa, $\frac{1}{2}$ mile south of; copper bolt sunk into west side of north pier, bridge over Arkansas River	640.95

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 22 and 23 N., Rs. 16 and 17 E., iron post	736. 19
Corner Ts. 22 and 23 N., Rs. 15 and 16 E., iron post	617. 23
Corner Ts. 22 and 23 N., Rs. 14 and 15 E., iron post	663. 665
Corner Ts. 22 and 23 N., Rs. 13 and 14 E., iron post	626. 285
Corner Ts. 22 and 23 N., Rs. 12 and 13 E., iron post	662. 745
Oklahoma-Cherokee boundary line, closing corner Ts. 22 and 23 N., R. 12 E., iron post	644. 305
Corner Ts. 21 and 22 N., Rs. 16 and 17 E., iron post	659. 045
Corner Ts. 21 and 22 N., Rs. 15 and 16 E., iron post	622. 6
Corner Ts. 21 and 22 N., Rs. 14 and 15 E., iron post	717. 3
Corner Ts. 21 and 22 N., Rs. 13 and 14 E., iron post	687. 345
Corner Ts. 21 and 22 N., Rs. 12 and 13 E., iron post	627. 51
Oklahoma-Cherokee boundary line, closing corner Ts. 21 and 22 N., R. 12 E., iron post	618. 175
Oklahoma-Cherokee boundary line, closing corner Ts. 20 and 21 N., R. 12 E., iron post	746. 34
Closing corner T. 20 N., Rs. 12 and 13 E., iron post	627. 185
Standard corner T. 21 N., Rs. 12 and 13 E., iron post	624. 61
Closing corner T. 20 N., Rs. 13 and 14 E., iron post	579. 08
Standard corner T. 21 N., Rs. 13 and 14 E., iron post	577. 995
Closing corner T. 20 N., Rs. 14 and 15 E., iron post	785. 005
Standard corner T. 21 N., Rs. 14 and 15 E., iron post	794. 135
Closing corner T. 20 N., Rs. 15 and 16 E., iron post	594. 316
Standard corner T. 21 N., Rs. 15 and 16 E., iron post	596. 516
Closing corner T. 20 N., Rs. 16 and 17 E., iron post	603. 427
Standard corner T. 21 N., Rs. 16 and 17 E., iron post	612. 905
Corner Ts. 19 and 20 N., Rs. 16 and 17 E., iron post	618. 161
Corner Ts. 19 and 20 N., Rs. 15 and 16 E., iron post	644. 111
Corner Ts. 19 and 20 N., Rs. 14 and 15 E., iron post	629. 821
Corner Ts. 19 and 20 N., Rs. 13 and 14 E., iron post	614. 821
Witness corner Ts. 19 and 20 N., Rs. 12 and 13 E., iron post	714. 821
Corner Ts. 18 and 19 N., Rs. 12 and 13 E., iron post	627. 679
Corner Ts. 18 and 19 N., Rs. 13 and 14 E., iron post	693. 349
Corner Ts. 18 and 19 N., Rs. 14 and 15 E., iron post	698. 139
Corner Ts. 18 and 19 N., Rs. 15 and 16 E., iron post	749. 849
Corner Ts. 18 and 19 N., Rs. 16 and 17 E., iron post	539. 579

PRYOR QUADRANGLE.

The railroad levels were run by Messrs. C. B. Odell, A. F. Hassan, and R. Coe. Mr. W. S. D. Moore had charge of an independent level party. Messrs. A. F. Hassan, E. W. Hill, J. P. Phelan, W. E. Earle, and H. L. Muldrow, jr., were attached to the subdivision and topographic party of Mr. R. H. McKee.

ON ST. LOUIS AND SAN FRANCISCO RAILROAD.

	Feet.
Chelsea, 4 miles south of; spike in mile pole 385.....	749. 466

FROM LELIAETTA, ALONG THE MISSOURI, KANSAS AND TEXAS RAILWAY, TO BIG CABIN.

Leliaetta, 2 miles north of; square hole cut in a limestone post, the exposed surface of which is 1.1 feet by 0.45 feet, buried flush with ground between sixth and seventh telegraph poles north of mile pole 482, 50 feet from north telegraph pole, and 27 feet left of track.....	580. 084
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	Feet.
Mazie; spike in telegraph mile pole 478	608. 725
Choteau; square hole cut in sandstone post 6 by 10 by 18 inches, buried flush with ground 10 feet west of track and 10.5 feet south of station building	625. 235
Choteau, 1 mile north of; square hole cut into coping stone west side of south pier, bridge over Choteau Creek	585. 294
Pryor Creek, 2 miles south of; square hole cut into coping stone, northwest corner of north abutment bridge 244, over Pryor Creek	595. 632
U. S.	
Pryor Creek; + cut in sandstone post 2 by 4 by 24 inches, which is B. M.	
buried flush with ground near southeast corner of station building	625. 236
Pryor Creek; bronze tablet set into third course of stone above sidewalk of south end of general merchandise store occupied by J. L. Baugh	630. 976
Perry, 2 miles south of; square hole cut into second coping stone of east end of the south abutment bridge 237, near mile pole 460	614. 849
Perry, 1 mile north of; copper bolt sunk into east coping stone of south abutment bridge 235, 2,000 feet north of mile pole 457	649. 499
Adair, 3 miles north of; copper bolt sunk into top stone of ballast wall on east side of south abutment bridge over Rock Creek, about one-fourth mile north of mile pole 451	661. 277
Big Cabin, 3 miles south of; square hole cut into top stone at east end of south abutment bridge 230, near mile pole 450	659. 925

ALONG TOWNSHIP LINES.

Corner Ts. 22 and 23 N., Rs. 17 and 18 E., iron post	803. 656
Corner Ts. 22 and 23 N., Rs. 18 and 19 E., iron post	633. 496
Corner Ts. 22 and 23 N., Rs. 19 and 20 E., iron post	657. 896
Corner Ts. 22 and 23 N., Rs. 20 and 21 E., iron post	689. 656
Corner Ts. 22 and 23 N., Rs. 21 and 22 E., iron post	854. 443
Corner Ts. 21 and 22 N., Rs. 21 and 22 E., iron post	1, 013. 253
Corner Ts. 21 and 22 N., Rs. 20 and 21 E., iron post	942. 151
Corner Ts. 21 and 22 N., Rs. 19 and 20 E., iron post	670. 751
Witness corner Ts. 21 and 22 N., Rs. 18 and 19 E., iron post	606. 36
Corner Ts. 21 and 22 N., Rs. 17 and 18 E., iron post	797. 892
Closing corner T. 20 N., Rs. 17 and 18 E., iron post	626. 954
Standard corner T. 21 N., Rs. 17 and 18 E., iron post	628. 744
Closing corner T. 20 N., Rs. 18 and 19 E., iron post	618. 974
Standard corner T. 21 N., Rs. 18 and 19 E., iron post	620. 204
Closing corner T. 20 N., Rs. 19 and 20 E., iron post	655. 533
Standard corner T. 21 N., Rs. 19 and 20 E., iron post	660. 595
Closing corner T. 20 N., Rs. 20 and 21 E., iron post	891. 033
Witness corner to standard corner T. 21 N., Rs. 20 and 21 E., iron post ..	785. 613
Closing corner T. 20 N., Rs. 21 and 22 E., iron post	960. 913
Standard corner T. 21 N., Rs. 21 and 22 E., iron post	998. 423
Corner Ts. 19 and 20 N., Rs. 21 and 22 E., iron post	1, 124. 823
Corner Ts. 19 and 20 N., Rs. 20 and 21 E., iron post	900. 015
Corner Ts. 19 and 20 N., Rs. 19 and 20 E., iron post	642. 685
Corner Ts. 19 and 20 N., Rs. 18 and 19 E., iron post	653. 165
Corner Ts. 19 and 20 N., Rs. 17 and 18 E., iron post	626. 855
Corner Ts. 18 and 19 N., Rs. 17 and 18 E., iron post	608. 054
Corner Ts. 18 and 19 N., Rs. 18 and 19 E., iron post	626. 16

	Feet.
Corner Ts. 18 and 19 N., Rs. 19 and 20 E., iron post.....	883. 755
Corner Ts. 18 and 19 N., Rs. 20 and 21 E., iron post.....	918. 786
Corner Ts. 18 and 19 N., Rs. 21 and 22 E., iron post.....	963. 046

SILOAM QUADRANGLE (INDIAN TERRITORY—ARKANSAS).

The railroad levels were run by Messrs. R. Coe and W. S. D. Moore. Messrs. W. E. Earle, G. Nick, E. W. Hill, S. C. Pitts, and H. L. Muldrow, jr., were attached to the subdivision and topographic party of Mr. R. H. McKee.

ALONG THE KANSAS CITY, PITTSBURG AND GULF RAILROAD TO SILOAM SPRINGS, ARKANSAS.

	Feet.
Corner Ts. 18 and 19 N., Rs. 25 and 26 E., iron post 12 chains west from railroad.....	1, 042. 878
Intersection of railroad with Arkansas-Cherokee boundary line, iron post.....	970. 83
Siloam Springs; iron post at southwest corner of platform, 60 feet south of station building and 15 feet west of track.....	1, 148. 604

ALONG TOWNSHIP LINES.

Corner Ts. 22 and 23 N., Rs. 22 and 23 E., iron post.....	1, 022. 786
Corner Ts. 22 and 23 N., Rs. 23 and 24 E., iron post.....	1, 058. 716
Corner Ts. 22 and 23 N., Rs. 24 and 25 E., iron post.....	1, 130. 953
Arkansas-Cherokee boundary line, closing corner Ts. 22 and 23 N., R. 25 E., iron post.....	1, 064. 453
Arkansas-Cherokee boundary line; witness to closing corner Ts. 21 and 22 N., R. 25 E., iron post.....	982. 812
Corner Ts. 21 and 22 N., Rs. 24 and 25 E., iron post.....	976. 663
Corner Ts. 21 and 22 N., Rs. 23 and 24 E., iron post.....	1, 029. 203
Corner Ts. 21 and 22 N., Rs. 22 and 23 E., iron post.....	964. 553
Closing corner T. 20 N., Rs. 22 and 23 E., iron post.....	1, 056. 473
Standard corner T. 21 N., Rs. 22 and 23 E., iron post.....	998. 103
Closing corner T. 20 N., Rs. 23 and 24 E., iron post.....	1, 095. 003
Standard corner T. 21 N., Rs. 23 and 24 E., iron post.....	1, 086. 423
Closing corner T. 20 N., Rs. 24 and 25 E., iron post.....	1, 139. 403
Standard corner T. 21 N., Rs. 24 and 25 E., iron post.....	1, 158. 543
Closing corner T. 20 N., Rs. 25 and 26 E., iron post.....	1, 158. 085
Arkansas-Cherokee boundary line, closing corner Ts. 20 and 21 N., R. 25 E., iron post.....	1, 137. 313
Arkansas-Cherokee boundary line, closing corner Ts. 19 and 20 N., R. 26 E., iron post.....	1, 147. 027
Corner Ts. 19 and 20 N., Rs. 25 and 26 E., iron post.....	1, 124. 022
Corner Ts. 19 and 20 N., Rs. 24 and 25 E., iron post.....	973. 993
Corner Ts. 19 and 20 N., Rs. 23 and 24 E., iron post.....	1, 108. 623
Corner Ts. 19 and 20 N., Rs. 22 and 23 E., iron post.....	1, 105. 753
Corner Ts. 18 and 19 N., Rs. 22 and 23 E., iron post.....	1, 002. 273
Corner Ts. 18 and 19 N., Rs. 23 and 24 E., iron post.....	1, 045. 231
Corner Ts. 18 and 19 N., Rs. 24 and 25 E., iron post.....	1, 074. 378
Arkansas-Cherokee boundary line, closing corner Ts. 18 and 19 N., R. 26 E., iron post.....	1, 095. 662

WINSLOW QUADRANGLE (INDIAN TERRITORY-ARKANSAS).

Levels for this small fractional quadrangle were run by Mr. J. H. Carlock, of Mr. C. W. Goodlove's party, and Mr. H. M. Tidwell, of Mr. R. H. McKee's party.

ALONG TOWNSHIP LINES.

	Feet.
Arkansas-Choctaw boundary line, closing corner Ts. 15 and 16 N., R. 26 E., iron post	1,062.238
Corner of Ts. 14 and 15 N., Rs. 26 and 27 E., iron post	1,574.13
Arkansas-Choctaw boundary line, closing corner Ts. 14 and 15 N., R. 27 E., iron post	1,581.43
Arkansas-Choctaw boundary line, closing corner Ts. 13 and 14 N., R. 27 E., iron post	1,017.74
Corner Ts. 13 and 14 N., Rs. 26 and 27 E., iron post	956
Closing corner T. 12 N., Rs. 26 and 27 E., iron post	590.308
Standard corner T. 13 N., Rs. 26 and 27 E., iron post	657.058
Arkansas-Choctaw boundary line, closing corner Ts. 12 and 13 N., R. 27 E., iron post	700.888

TAHLEQUAH QUADRANGLE.

The railroad levels were run by Messrs. E. L. Faison, W. S. D. Moore, and R. Coe. Mr. W. S. D. Moore had an independent level party. Mr. J. H. Carlock was attached to the subdivision and topographic party of Mr. C. W. Goodlove; Mr. J. P. Walker to Mr. J. Ahern's party; and Messrs. H. L. Muldrow, W. S. D. Moore, H. M. Tidwell, H. H. Hellen, and D. Hannegan ran levels for Mr. R. H. McKee's party.

FROM MARBLE, ALONG THE KANSAS CITY, PITTSBURG AND GULF RAILROAD, TO WESTVILLE.

	Feet.
Marble, 2 miles south of; intersection of railroad with third standard parallel north, R. 23 E., near railroad mile pole 283, iron post	635.527
Marble, 1 mile north of; intersection of railroad with township line, T. 13 N., Rs. 23 and 24 E., near railroad mile pole 280, iron post	639.991
Bunch, $1\frac{1}{4}$ miles south of; on northwest corner of south abutment, bridge over Sallisaw Creek	734.515
Kenedy's siding, 2 miles north of; intersection of railroad with township line, Ts. 14 and 15 N., R. 24 E., 1,000 feet south of railroad mile pole 268, iron post	838.17
Stilwell; square hole cut in northeast corner of foundation stone of coal chute	1,106.048
Barren, 2 miles south of; intersection of railroad with fourth standard parallel, 45 feet west of quarter corner of sec. 34, T. 17 N., R. 25 E., 660 feet north of mile pole 252, iron post	924.316
Barren, $\frac{1}{2}$ mile south of; northwest anchor bolt, on last coping stone of north abutment, bridge over Barren Fork	876.073
Westville; intersection of railroad and township line, Ts. 17 and 18 N., R. 26 E., 1,480 feet north of mile pole 245, and 1,790 feet south of Westville station, iron post	1,124.442

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 17 and 18 N., Rs. 22 and 23 E., iron post	729.011
Corner Ts. 17 and 18 N., Rs. 23 and 24 E., iron post	1,030.411
Corner Ts. 17 and 18 N., Rs. 24 and 25 E., iron post	1,107.151
Corner Ts. 17 and 18 N., Rs. 25 and 26 E., iron post	1,123.833
Arkansas-Choctaw boundary line, closing corner Ts. 17 and 18 N., R. 26 E., iron post.....	1,176.843
Arkansas-Choctaw boundary line, closing corner fourth standard parallel, R. 26 E., iron post.....	1,119.296
Standard corner T. 17 N., Rs. 25 and 26 E., iron post	1,078.946
Closing corner T. 16 N., Rs. 25 and 26 E., iron post.....	1,130.766
Standard corner T. 17 N., Rs. 24 and 25 E., iron post	1,156.445
Closing corner T. 16 N., Rs. 24 and 25 E., iron post.....	1,074.095
Standard corner T. 17 N., Rs. 23 and 24 E., iron post	1,085.815
Closing corner T. 16 N., Rs. 23 and 24 E., iron post.....	1,060.815
Standard corner T. 17 N., Rs. 22 and 23 E., iron post	892.772
Closing corner T. 16 N., Rs. 22 and 23 E., iron post.....	921.739
Witness corner to Ts. 15 and 16 N., Rs. 22 and 23 E., iron post	623.736
Corner Ts. 15 and 16 N., Rs. 23 and 24 E., iron post	982.496
Corner Ts. 15 and 16 N., Rs. 24 and 25 E., iron post	1,019.158
Corner Ts. 15 and 16 N., Rs. 25 and 26 E., iron post	1,111.968
Corner Ts. 14 and 15 N., Rs. 25 and 26 E., iron post	1,226.88
Corner Ts. 14 and 15 N., Rs. 24 and 25 E., iron post	1,353.76
Corner Ts. 14 and 15 N., Rs. 23 and 24 E., iron post	1,015.062
Corner Ts. 14 and 15 N., Rs. 22 and 23 E., iron post	804.762
Corner Ts. 13 and 14 N., Rs. 22 and 23 E., iron post	1,283.271
Corner Ts. 13 and 14 N., Rs. 23 and 24 E., iron post	766.501
Corner Ts. 13 and 14 N., Rs. 24 and 25 E., iron post	1,174.571
Corner Ts. 13 and 14 N., Rs. 25 and 26 E., iron post	802.851
Standard corner T. 13 N., Rs. 25 and 26 E., iron post	760.628
Closing corner T. 12 N., Rs. 25 and 26 E., iron post.....	694.128
Standard corner T. 13 N., Rs. 24 and 25 E., iron post.....	887.194
Closing corner T. 12 N., Rs. 24 and 25 E., iron post.....	798.308
Standard corner T. 13 N., Rs. 23 and 24 E., iron post	721.787
Closing corner T. 12 N., Rs. 23 and 24 E., iron post.....	639.786
Standard corner T. 13 N., Rs. 22 and 23 E., iron post	564.678
Closing corner T. 12 N., Rs. 22 and 23 E., iron post.....	711.482

MUSCOGEE QUADRANGLE.

The railroad levels were run by Messrs. R. Coe, G. A. Purington, A. F. Hassan, J. Phelan, and C. B. Odell. Messrs. W. S. D. Moore, C. B. Odell, A. F. Hassan, E. M. Fry, and E. L. Faison had charge of independent parties. Messrs. George Nick and J. P. Walker were attached to the subdivision and topographic party of Mr. Jeremiah Ahern, while Messrs. H. L. Muldrow, H. H. Hellen, and W. S. D. Moore were attached to that of Mr. R. H. McKee.

FROM CHECOTAH, ALONG THE MISSOURI, KANSAS AND TEXAS
RAILWAY, TO WAGONER.

	Feet.
Checotah, $\frac{1}{2}$ mile north of; cottonwood tree 60 feet left of line and 100 feet north of mile pole 525.....	637.201

Feet.

Oktaha, 2 miles south of; copper bolt in natural ledge of stone 84.5 feet west of track and 1,815 feet south of mile pole 519; opposite old water tank foundation.....	551.745
Oktaha, spike in first telegraph pole south of mile pole 517.....	591.278
Summit, 1½ miles south of; copper bolt set 8 inches from east edge of the east coping stone of south pier, bridge 273.....	570.745
Summit, spike in mile pole 510.....	601.786
Muscogee, iron post at southeast corner of Hotel Adams lawn, 24.3 feet from railroad and 19.7 feet from hotel.....	599.829
Muscogee, bronze tablet in second course of stone above sidewalk of First National Bank building, left of entrance.....	608.618
Wybark, 1 mile south of; square hole cut into top stone on east side of ballast wall, south abutment Missouri, Kansas and Texas Railway bridge over Arkansas River.....	527.559
Blackstone, ½ mile north of; copper bolt sunk into coping stone of east side of south abutment of bridge over Verdigris River.....	518.941
Gibson station, ½ mile south of; square hole cut into west coping stone of north abutment of bridge south of mile pole 493.....	535.302
Wagoner, copper bolt sunk into stone, 54 feet north of the intersection of the Missouri, Kansas and Texas and St. Louis, Iron Mountain and Southern railroads.....	578.472

FROM ILLINOIS ALONG THE ST. LOUIS, IRON MOUNTAIN AND SOUTHERN RAILWAY TO WAGONER.

Illinois, 2 miles south of; copper bolt set into coping stone of north side of west pier of bridge over Illinois River.....	477.282
Illinois, 2½ miles north of; at the intersection of railroad and third standard parallel north; a sandstone post 18 by 18 by 15 inches, set between two small elm trees, which are 55.8 feet right of railroad.....	500.203
Braggs, 3 miles south of; nail in post oak tree 24 inches, 45 feet right of railroad.....	494.454
Braggs, 3 miles north of; copper bolt set into third coping stone of north end of east pier of bridge 104, which is 700 feet west of mile pole 567... ..	502.315
Fort Gibson, 2½ miles south of; square hole cut into second coping stone of east pier of bridge 106 over Bayou Manard.....	510.732
Fort Gibson, 1 mile north of; copper bolt set into third coping stone of east pier of bridge over Grand River.....	515.515
Correta, 1 mile south of; nail in post oak 12 inches in diameter, 75 feet right of track, 300 feet east of mile pole 579.....	550.334
Correta, 1 mile north of; red oak 20 inches in diameter, 75 feet right of track, 90 feet north of mile pole 581.....	515.528
Wagoner, bronze tablet set into first course of stone, 2½ feet above sidewalk, and 8 inches from south corner of First National Bank Building.....	588.436

ALONG TOWNSHIP LINES.

Corner Ts. 17 and 18 N., Rs. 17 and 18 E., iron post.....	555.162
Corner Ts. 17 and 18 N., Rs. 18 and 19 E., iron post.....	545.261
Corner Ts. 17 and 18 N., Rs. 19 and 20 E., iron post.....	691.926
Corner Ts. 17 and 18 N., Rs. 20 and 21 E., iron post.....	676.141
Corner Ts. 17 and 18 N., Rs. 21 and 22 E., iron post.....	928.561
Standard corner T. 17 N., Rs. 21 and 22 E., iron post.....	798.569
Closing corner T. 16 N., Rs. 21 and 22 E., iron post.....	814.089
Standard corner T. 17 N., Rs. 20 and 21 E., iron post.....	811.423

	Feet.
Closing corner T. 16 N., Rs. 20 and 21 E., iron post	756. 873
Standard corner T. 17 N., Rs. 19 and 20 E., iron post	679. 989
Standard corner T. 17 N., Rs. 18 and 19 E., iron post	565. 105
Standard corner T. 17 N., 17 and 18 E., iron post	513. 175
Corner Ts. 15 and 16 N., Rs. 17 and 18 E., iron post	608. 222
Corner Ts. 15 and 16 N., Rs. 18 and 19 E., iron post	515. 2
Corner Ts. 15 and 16 N., Rs. 19 and 20 E., iron post	601. 499
Corner Ts. 15 and 16 N., Rs. 20 and 21 E., iron post	666. 365
Corner Ts. 15 and 16 N., Rs. 21 and 22 E., iron post	832. 446
Corner Ts. 14 and 15 N., Rs. 21 and 22 E., iron post	768. 502
Corner Ts. 14 and 15 N., Rs. 20 and 21 E., iron post	660. 562
Corner Ts. 14 and 15 N., Rs. 18 and 19 E., iron post	560. 153
Corner Ts. 14 and 15 N., Rs. 17 and 18 E., iron post	626. 221
Corner Ts. 13 and 14 N., Rs. 17 and 18 E., iron post	612. 197
Corner Ts. 13 and 14 N., Rs. 18 and 19 E., iron post	570. 197
Corner Ts. 13 and 14 N., Rs. 20 and 21 E., iron post	776. 775
Corner Ts. 13 and 14 N., Rs. 21 and 22 E., iron post	527. 225
Standard corner T. 13 N., Rs. 21 and 22 E., iron post	828. 097
Closing corner T. 12 N., Rs. 21 and 22 E., iron post	799. 963
Standard corner T. 13 N., Rs. 20 and 21 E., iron post	613. 945
Closing corner T. 12 N., Rs. 20 and 21 E., iron post	504. 083
Standard corner T. 13 N., Rs. 19 and 20 E., iron post	533. 045
Closing corner T. 12 N., Rs. 19 and 20 E., iron post	544. 099
Standard corner T. 13 N., Rs. 18 and 19 E., iron post	510. 016
Closing corner T. 12 N., Rs. 18 and 19 E., iron post	512. 755
Standard corner T. 13 N., Rs. 17 and 18 E., iron post	708. 645
Closing corner T. 12 N., Rs. 17 and 18 E., iron post	733. 745

OKMULGEE QUADRANGLE.

No railroad levels were run in this quadrangle. Messrs. W. S. D. Moore, C. B. Odell, A. F. Hassan, E. M. Fry, E. H. Lonsdale, and E. L. Faison had charge of independent level parties.

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 17 and 18 N., Rs. 12 and 13 E., iron post	720. 067
Corner Ts. 17 and 18 N., Rs. 13 and 14 E., iron post	618. 257
Corner Ts. 17 and 18 N., Rs. 14 and 15 E., iron post	629. 297
Corner Ts. 17 and 18 N., Rs. 15 and 16 E., iron post	723. 357
Corner Ts. 17 and 18 N., Rs. 16 and 17 E., iron post	524. 007
Standard corner T. 17 N., Rs. 16 and 17 E., iron post	604. 495
Standard corner T. 17 N., Rs. 15 and 16 E., iron post	565. 459
Standard corner T. 17 N., Rs. 14 and 15 E., iron post	704. 2
Standard corner T. 17 N., Rs. 13 and 14 E., iron post	597. 175
Standard corner T. 17 N., Rs. 12 and 13 E., iron post	711. 175
Corner Ts. 15 and 16 N., Rs. 12 and 13 E., iron post	716. 168
Corner Ts. 15 and 16 N., Rs. 13 and 14 E., iron post	654. 172
Corner Ts. 15 and 16 N., Rs. 14 and 15 E., iron post	670. 174
Corner Ts. 15 and 16 N., Rs. 15 and 16 E., iron post	562. 187
Corner Ts. 15 and 16 N., Rs. 16 and 17 E., iron post	567. 268
Corner Ts. 14 and 15 N., Rs. 16 and 17 E., iron post	650. 174
Corner Ts. 14 and 15 N., Rs. 15 and 16 E., iron post	607. 19
Corner Ts. 14 and 15 N., Rs. 14 and 15 E., iron post	671. 174
Corner Ts. 14 and 15 N., Rs. 13 and 14 E., iron post	768. 188

	Feet.
Corner Ts. 14 and 15 N., Rs. 12 and 13 E., iron post	885. 166
Corner Ts. 13 and 14 N., Rs. 12 and 13 E., iron post	678. 227
Corner Ts. 13 and 14 N., Rs. 13 and 14 E., iron post	698. 195
Corner Ts. 13 and 14 N., Rs. 14 and 15 E., iron post	658. 198
Corner Ts. 13 and 14 N., Rs. 15 and 16 E., iron post	635. 197
Corner Ts. 13 and 14 N., Rs. 16 and 17 E., iron post	680. 855
Standard corner T. 13 N., Rs. 16 and 17 E., iron post	611. 863
Closing corner T. 12 N., Rs. 16 and 17 E., iron post	616. 846
Standard corner T. 13 N., Rs. 15 and 16 E., iron post	644. 858
Closing corner T. 12 N., Rs. 15 and 16 E., iron post	639. 823
Standard corner T. 13 N., Rs. 14 and 15 E., iron post	805. 861
Closing corner T. 12 N., Rs. 14 and 15 E., iron post	742. 85
Standard corner T. 13 N., Rs. 13 and 14 E., iron post	660. 86
Closing corner T. 12 N., Rs. 13 and 14 E., iron post	648. 866
Standard corner T. 13 N., Rs. 12 and 13 E., iron post	789. 952
Closing corner T. 12 N., Rs. 12 and 13 E., iron post	807. 215

NUYAKA QUADRANGLE.

The levels in this quadrangle were run by several independent parties under Messrs. W. S. D. Moore, W. R. Manning, A. F. Hassan, E. M. Fry, E. L. Faison, C. B. Odell, and E. H. Lonsdale.

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 17 and 18 N., Rs. 8 and 9 E., iron post	831. 885
Corner Ts. 17 and 18 N., Rs. 11 and 12 E., iron post	649. 175
Standard corner T. 17 N., Rs. 11 and 12 E., iron post	881. 175
Closing corner T. 16 N., Rs. 11 and 12 E., iron post	843. 027
Standard corner T. 17 N., Rs. 10 and 11 E., iron post	767. 137
Closing corner T. 16 N., Rs. 10 and 11 E., iron post	699. 285
Closing corner T. 16 N., Rs. 9 and 10 E., iron post	758. 305
Standard corner T. 17 N., Rs. 8 and 9 E., iron post	923. 309
Corner Ts. 15 and 16 N., Rs. 8 and 9 E., iron post	780. 763
Corner Ts. 15 and 16 N., Rs. 9 and 10 E., iron post	757. 385
Corner Ts. 15 and 16 N., Rs. 10 and 11 E., iron post	969. 152
Corner Ts. 15 and 16 N., Rs. 11 and 12 E., iron post	792. 165
Corner Ts. 14 and 15 N., Rs. 11 and 12 E., iron post	831. 169
Corner Ts. 14 and 15 N., Rs. 10 and 11 E., iron post	726. 351
Corner Ts. 14 and 15 N., Rs. 9 and 10 E., iron post	798. 297
Corner Ts. 14 and 15 N., Rs. 8 and 9 E., iron post	845. 11
Corner Ts. 13 and 14 N., Rs. 8 and 9 E., iron post	717. 728
Corner Ts. 13 and 14 N., Rs. 9 and 10 E., iron post	756. 488
Corner Ts. 13 and 14 N., Rs. 10 and 11 E., iron post	673. 398
Corner Ts. 13 and 14 N., Rs. 11 and 12 E., iron post	869. 598
Standard corner T. 13 N., Rs. 11 and 12 E., iron post	841. 561
Standard corner T. 13 N., Rs. 10 and 11 E., iron post	748. 85
Standard corner T. 13 N., Rs. 9 and 10 E., iron post	782. 842
Standard corner T. 13 N., Rs. 8 and 9 E., iron post	876. 842

WEWOKA QUADRANGLE.

The railroad levels were run by Mr. E. L. Faison. Messrs. W. S. D. Moore, W. R. Manning, and E. L. Faison had independent level parties.

FROM HOLDENVILLE, ALONG THE CHOCTAW, OKLAHOMA AND
GULF RAILROAD, TO WEWOKA.

	Feet.
Holdenville, 5 miles east of; square hole cut in large stone 30 feet south of track and 35 feet east of trestle No. 154.....	813.659
Holdenville; iron post at northwest corner of platform, 75 feet west of station building and 15 feet north of track.....	862.744
Wewoka; iron post south of track, 5 feet east of mile pole No. 99 and 2,400 feet west of station building.....	786.277

ALONG TOWNSHIP LINES.

Corner Ts. 11 and 12 N., Rs. 8 and 9 E., iron post.....	896.074
Corner Ts. 11 and 12 N., Rs. 9 and 10 E., iron post.....	903.553
Corner Ts. 11 and 12 N., Rs. 10 and 11 E., iron post.....	889.942
Corner Ts. 11 and 12 N., Rs. 11 and 12 E., iron post.....	716.135
Corner Ts. 10 and 11 N., Rs. 11 and 12 E., iron post.....	726.32
Corner Ts. 10 and 11 N., Rs. 10 and 11 E., iron post.....	893.388
Corner Ts. 10 and 11 N., Rs. 9 and 10 E., iron post.....	855.052
Corner Ts. 10 and 11 N., Rs. 8 and 9 E., iron post.....	826.052
Corner Ts. 9 and 10 N., Rs. 8 and 9 E., iron post.....	846.839
Corner Ts. 9 and 10 N., Rs. 9 and 10 E., iron post.....	855.908
Corner Ts. 9 and 10 N., Rs. 10 and 11 E., iron post.....	748.966
Corner Ts. 9 and 10 N., Rs. 11 and 12 E., iron post.....	733.106
Standard corner, T. 9 N., Rs. 11 and 12 E., iron post.....	832.855
Standard corner, T. 9 N., Rs. 10 and 11 E., iron post.....	787.233
Standard corner, T. 9 N., Rs. 9 and 10 E., iron post.....	734.165
Standard corner, T. 9 N., Rs. 8 and 9 E., iron post.....	847.189
Corner Ts. 7 and 8 N., Rs. 8 and 9 E., iron post.....	798.729
Corner Ts. 7 and 8 N., Rs. 9 and 10 E., iron post.....	866.892
Corner Ts. 7 and 8 N., Rs. 10 and 11 E., iron post.....	921.165
Corner Ts. 7 and 8 N., Rs. 11 and 12 E., iron post.....	811.812
Corner Ts. 6 and 7 N., Rs. 11 and 12 E., iron post.....	854.793
Corner Ts. 6 and 7 N., Rs. 10 and 11 E., iron post.....	827.787
Corner Ts. 6 and 7 N., Rs. 9 and 10 E., iron post.....	800.811
Corner Ts. 6 and 7 N., Rs. 8 and 9 E., iron post.....	752.823

CANADIAN QUADRANGLE.

The railroad levels were run by Mr. G. A. Purington. Messrs. E. L. Faison, W. R. Manning, and W. S. D. Moore had independent level parties. Messrs. George Nick and J. P. Walker were attached to the topographic and subdivision party of Mr. Jeremiah Ahern, while Messrs. Moore and Purington were attached for a short time to that of Mr. W. B. Corse.

FROM M'ALESTER, ALONG THE MISSOURI, KANSAS AND TEXAS
RAILWAY, TO CHECOTAH.

	Feet.
McAlester, 3 miles north of; nail in post oak 36 inches in diameter, 50 feet right of track and 1,100 feet south of mile pole 561.....	623.557
Reams, $\frac{1}{2}$ mile south of; copper bolt sunk into first coping stone of north-east abutment of trestle 317, 3,000 feet north of mile pole 556.....	612.067
Reams; on "head block" of north end of siding.....	595.3

Feet.

Reams, 5 miles north of; copper bolt set into stone on northeast abutment, north end of trestle 310, which is the first trestle south of mile pole 550..	609.022
South Canadian, $\frac{1}{4}$ mile north of; nail in root of black jack oak, 24 inches in diameter, 60 feet left of track and 60 feet north of mile pole 547.....	654.873
South Canadian, $3\frac{3}{8}$ miles north of; copper bolt set into first coping stone of northwest abutment bridge 304, which spans the South Canadian River.	556.558
Eufaula; 1,000 feet north of station building, red oak, 12 inches in diameter, 50 feet left of track and 140 feet north of mile pole 538.....	617.219
Eufaula, 2 miles north of; copper bolt set into first coping stone on northwest abutment of bridge 298, which spans the North Canadian River..	549.439
Bond; copper bolt set into stone on northwest side of stone culvert, north of section house 75 and 90 feet north of switch	661.031
Checotah, $\frac{1}{3}$ mile south of; nail in cottonwood tree 60 feet left of track and 100 feet north of mile pole 525.....	637.201

ALONG TOWNSHIP LINES.

Corner Ts. 11 and 12 N., Rs. 12 and 13 E., iron post.....	872.835
Corner Ts. 11 and 12 N., Rs. 13 and 14 E., iron post.....	593.88
Corner Ts. 11 and 12 N., Rs. 14 and 15 E., iron post.....	757.826
Corner Ts. 11 and 12 N., Rs. 15 and 16 E., iron post.....	659.538
Corner Ts. 11 and 12 N., Rs. 16 and 17 E., iron post.....	640.989
Corner Ts. 10 and 11 N., Rs. 16 and 17 E., iron post.....	629.512
Corner Ts. 10 and 11 N., Rs. 15 and 16 E., iron post.....	608.978
Corner Ts. 10 and 11 N., Rs. 14 and 15 E., iron post.....	631.342
Corner Ts. 10 and 11 N., Rs. 13 and 14 E., iron post.....	663.469
Corner Ts. 10 and 11 N., Rs. 12 and 13 E., iron post.....	735.478
Corner Ts. 9 and 10 N., Rs. 12 and 13 E., iron post.....	803.885
Corner Ts. 9 and 10 N., Rs. 13 and 14 E., iron post.....	715.269
Corner Ts. 9 and 10 N., Rs. 14 and 15 E., iron post.....	672.545
Corner Ts. 9 and 10 N., Rs. 15 and 16 E., iron post.....	630.256
Corner Ts. 9 and 10 N., Rs. 16 and 17 E., iron post.....	565.803
Standard corner T. 9 N., Rs. 16 and 17 E., iron post.....	562.048
Standard corner T. 9 N., Rs. 15 and 16 E., iron post.....	604.909
Standard corner T. 9 N., Rs. 14 and 15 E., iron post.....	675.827
Standard corner T. 9 N., Rs. 13 and 14 E., iron post.....	694.866
Standard corner T. 9 N., Rs. 12 and 13 E., iron post.....	720.91
Corner Ts. 7 and 8 N., Rs. 12 and 13 E., iron post.....	838.844
Corner Ts. 7 and 8 N., Rs. 13 and 14 E., iron post.....	702.795
Corner Ts. 7 and 8 N., Rs. 14 and 15 E., iron post.....	651.81
Corner Ts. 7 and 8 N., Rs. 15 and 16 E., iron post.....	717.276
Corner Ts. 7 and 8 N., Rs. 16 and 17 E., iron post.....	760.818
Corner Ts. 6 and 7 N., Rs. 16 and 17 E., iron post.....	761.818
Corner Ts. 6 and 7 N., Rs. 15 and 16 E., iron post.....	557.947
Corner Ts. 6 and 7 N., Rs. 14 and 15 E., iron post.....	880.861
Corner Ts. 6 and 7 N., Rs. 13 and 14 E., iron post.....	657.959
Corner Ts. 6 and 7 N., Rs. 12 and 13 E., iron post.....	766.841

SANSBOIS QUADRANGLE.

No levels were run by railroad or independent parties. Messrs. G. A. Purington and W. S. D. Moore were attached to the subdivision and topographic party of Mr. W. B. Corse (relieved by Mr. Farmer), and Messrs. George Nick and J. P. Walker to Mr. J. Ahern's party.

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 11 and 12 N., Rs. 17 and 18 E., iron post	656.974
Corner Ts. 11 and 12 N., Rs. 18 and 19 E., iron post	588.494
Corner Ts. 11 and 12 N., Rs. 19 and 20 E., iron post	557.625
Corner Ts. 11 and 12 N., Rs. 20 and 21 E., iron post	470.948
Corner Ts. 11 and 12 N., Rs. 21 and 22 E., iron post	518.914
Corner Ts. 10 and 11 N., Rs. 21 and 22 E., iron post	560.5
Corner Ts. 10 and 11 N., Rs. 20 and 21 E., iron post	468.641
Corner Ts. 10 and 11 N., Rs. 19 and 20 E., iron post	560.514
Corner Ts. 10 and 11 N., Rs. 18 and 19 E., iron post	872.383
Corner Ts. 10 and 11 N., Rs. 17 and 18 E., iron post	586.11
Corner Ts. 9 and 10 N., Rs. 17 and 18 E., iron post	871.508
Corner Ts. 9 and 10 N., Rs. 18 and 19 E., iron post	815.035
Corner Ts. 9 and 10 N., Rs. 19 and 20 E., iron post	516.562
Corner Ts. 9 and 10 N., Rs. 20 and 21 E., iron post	541.781
Corner Ts. 9 and 10 N., Rs. 21 and 22 E., iron post	605.42
Standard corner T. 9 N., Rs. 21 and 22 E., iron post	473.754
Closing corner T. 8 N., Rs. 21 and 22 E., iron post	477.854
Standard corner T. 9 N., Rs. 20 and 21 E., iron post	682.274
Closing corner T. 8 N., Rs. 20 and 21 E., iron post	706.724
Standard corner T. 9 N., Rs. 19 and 20 E., iron post	627.104
Closing corner T. 8 N., Rs. 19 and 20 E., iron post	655.434
Standard corner T. 9 N., Rs. 18 and 19 E., iron post	901.987
Closing corner T. 8 N., Rs. 18 and 19 E., iron post	937.289
Standard corner T. 9 N., Rs. 17 and 18 E., iron post	834.587
Closing corner T. 8 N., Rs. 17 and 18 E., iron post	840.344
Corner Ts. 7 and 8 N., Rs. 17 and 18 E., iron post	915.597
Corner Ts. 7 and 8 N., Rs. 18 and 19 E., iron post	616.317
Corner Ts. 7 and 8 N., Rs. 19 and 20 E., iron post	532.857
Corner Ts. 7 and 8 N., Rs. 20 and 21 E., iron post	620.677
Corner Ts. 7 and 8 N., Rs. 21 and 22 E., iron post	602.797
Corner Ts. 6 and 7 N., Rs. 21 and 22 E., iron post	801.106
Corner Ts. 6 and 7 N., Rs. 20 and 21 E., iron post	831.526
Corner Ts. 6 and 7 N., Rs. 19 and 20 E., iron post	948.666
Corner Ts. 6 and 7 N., Rs. 18 and 19 E., iron post	1,293.066
Corner Ts. 6 and 7 N., Rs. 17 and 18 E., iron post	900.81

SALLISAW QUADRANGLE.

The railroad levels were run by Messrs. R. Coe, G. A. Purington, E. L. Faison, E. M. Fry, C. H. Hickman, and J. W. Phelan. Mr. J. H. Carlock was attached to the subdivision and topographic party of Mr. C. W. Goodlove; Messrs. J. P. Walker and D. Voorhees to that of Mr. J. Ahern, and Messrs. E. M. Fry and G. A. Purington to that of Mr. R. A. Farmer.

FROM SALLISAW, ALONG THE KANSAS CITY, PITTSBURG AND GULF RAILROAD, TO POTEAU.

	Feet.
Sallisaw; iron post set at south end of platform, east of track, at Kansas City, Pittsburg and Gulf Railroad station	524.251
Sallisaw, 4 miles south of; intersection of railroad with sixth guide meridian east; iron post set in line of telegraph poles, 3,000 feet north of mile pole 295	567.102

Feet.

Gans, $\frac{1}{2}$ mile south of; the intersection of railroad with township line, Ts. 10 and 11 N., R. 25 E.; iron post set in line of telegraph poles, 35 feet west of track	481.56
Redland, $\frac{1}{2}$ mile south of; intersection of railroad with township line, Ts. 9 and 10 N., R. 25 E., iron post 15 feet west of track	430.633
Oak Lodge, $2\frac{1}{2}$ miles south of; intersection of railroad with second standard parallel north, R. 25 E., spike in white oak (blazed and marked), 50 feet west of track	474.72
Shady Point, $\frac{1}{2}$ mile south of; intersection of township line, Ts. 7 and 8 N., R. 25 E., 100 feet south of mile pole 321, and 60 feet west of track; iron post	427.565
Poteau; iron post set at south end of station platform, 36 feet west of main track	457.005
Poteau, $1\frac{3}{4}$ miles south of; intersection of railroad with township line, Ts. 6 and 7 N., R. 25 E.; water oak, 60 feet west of track	441.805

FROM CAMERON, ALONG THE ST. LOUIS AND SAN FRANCISCO
RAILROAD, TO POTEAU.

Cameron; copper bolt in stone monument 57 feet east of track and 60 feet north of station building. Monument is referenced by a stone 12 feet north and one 12 feet east	487.591
Cameron; bronze tablet set into fifth stone above foundation course at southeast corner of building owned by Mrs. F. H. Carr, and used as a general store and post-office building, is 170 feet west of the St. Louis and San Francisco track, and 27 feet south of a prolonged line of the south end of the station building	487.518
Cameron, 5 miles south of; hickory tree 12 inches in diameter, 60 feet left of track and 260 feet north of mile pole 441	445.479
Poteau, 2 miles south of; "twin" post oak, 70 feet right of track and 800 feet south of mile pole 447	505.496

FROM CHEROKEE, ALONG THE ST. LOUIS, IRON MOUNTAIN AND
SOUTHERN RAILWAY, TO VIAN.

Cherokee, 5 miles west of; at bridge 26, spike in black oak, 15 inches in diameter, 70 feet left of track	480.746
Muldrow; sandstone post, 2 by 6 by 6 inches, marked B + M, buried 6 inches below surface, 71.3 feet from northeast corner of station building and 30 feet from "mail grab"	510.846
Hanson; spike in red oak 4 inches in diameter, 100 feet left of track	568.741
Sallisaw; sandstone post, 2 by 8 by 5 inches, marked $\begin{smallmatrix} \text{U.S.G.S.} \\ \text{B} + \text{M} \end{smallmatrix}$, buried south of station building, 40.6 feet from southeast and 44.8 feet from southwest corners of same	530.188
McKey, spike in red oak 8 inches in diameter, 60 feet right of track	536.086
Vian; sandstone post, 28 by 8 by 4 inches, marked $\begin{smallmatrix} \text{U.S.G.S.} \\ \text{B} + \text{M} \end{smallmatrix}$, buried 6 inches beneath the surface, south of station building, 31.7 feet from southwest and 36.7 feet from southeast corners of same	545.598

ALONG TOWNSHIP LINES.

Corner Ts. 11 and 12 N., Rs. 22 and 23 E., iron post	478.108
Corner Ts. 11 and 12 N., Rs. 23 and 24 E., iron post	550.394
Corner Ts. 11 and 12 N., Rs. 24 and 25 E., iron post	532.658

	Feet.
Corner Ts. 11 and 12 N., Rs. 25 and 26 E., iron post	684.998
Corner Ts. 10 and 11 N., Rs. 25 and 26 E., iron post	477.675
Corner Ts. 10 and 11 N., Rs. 24 and 25 E., iron post	564.89
Corner Ts. 10 and 11 N., Rs. 23 and 24 E., iron post	494.963
Corner Ts. 10 and 11 N., Rs. 22 and 23 E., iron post	445.628
Corner Ts. 9 and 10 N., Rs. 22 and 23 E., iron post	458.547
Corner Ts. 9 and 10 N., Rs. 23 and 24 E., iron post	603.999
Corner Ts. 9 and 10 N., Rs. 24 and 25 E., iron post	440.093
Corner Ts. 9 and 10 N., Rs. 25 and 26 E., iron post	423.723
Closing corner T. 8 N., Rs. 26 and 27 E., iron post	622.37
Standard corner T. 9 N., Rs. 25 and 26 E., iron post	437.53
Closing corner T. 8 N., Rs. 25 and 26 E., iron post	440.51
Standard corner T. 9 N., Rs. 24 and 25 E., iron post	570.324
Closing corner T. 8 N., Rs. 24 and 25 E., iron post	562.334
Standard corner T. 9 N., Rs. 23 and 24 E., iron post	553.614
Closing corner T. 8 N., Rs. 23 and 24 E., iron post	540.374
Standard corner T. 9 N., Rs. 22 and 23 E., iron post	693.454
Closing corner T. 8 N., Rs. 22 and 23 E., iron post	633.544
Corner Ts. 7 and 8 N., Rs. 22 and 23 E., iron post	655.747
Corner Ts. 7 and 8 N., Rs. 23 and 24 E., iron post	466.057
Corner Ts. 7 and 8 N., Rs. 24 and 25 E., iron post	519.767
Corner Ts. 7 and 8 N., Rs. 25 and 26 E., iron post	424.187
Corner Ts. 7 and 8 N., Rs. 26 and 27 E., iron post	521.032
Corner Ts. 6 and 7 N., Rs. 26 and 27 E., iron post	583.406
Corner Ts. 6 and 7 N., Rs. 25 and 26 E., iron post	443.266
Corner Ts. 6 and 7 N., Rs. 24 and 25 E., iron post	711.136
Corner Ts. 6 and 7 N., Rs. 23 and 24 E., iron post	1,287.856
Corner Ts. 6 and 7 N., Rs. 22 and 23 E., iron post	511.336

FORT SMITH QUADRANGLE (INDIAN TERRITORY-ARKANSAS).

The railroad levels were run by Messrs. R. Coe, C. H. Hickman, J. Phelan, and G. A. Purington. Mr. J. H. Carlock was attached to the subdivision and topographic party of Mr. C. W. Goodlove, and Mr. E. M. Fry to that of Mr. R. A. Farmer.

FROM FORT SMITH, ARKANSAS, ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD, TO JENSON, ARKANSAS.

	Feet.
Fort Smith, Arkansas (bench mark established by United States Coast and Geodetic Survey); a copper bolt leaded in the west wall of United States jail (brick). The bolt is in the first course above the limestone base stone and about 1 meter above the ground. It is in the fifth brick from the panel formed by the side of the building and the brick ventilator. The jail is a new pressed-brick addition to the old United States building. A cross was cut in the end of the bolt, and the intersection of the lines forming the cross is the bench mark. The letters U. S. B. M. were in the base stone immediately below the bolt	446.29
Fort Smith, Arkansas, 5 miles south of; black oak 65 feet to the right of track and 190 feet north of milepole 420	478.696
Cedars, Indian Territory; elm 12 inches in diameter 45 feet left and 75 feet south of milepole 424	448.044
Jenson, Arkansas; square hole drilled into the north veranda post stone of stone building just back of station, which has been destroyed by fire.	545.11
Jenson, 4 miles south of; water oak 50 feet left of track and nearly opposite milepole 433	452.629

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 11 and 12 N., Rs. 26 and 27 E., iron post.....	723. 718
Arkansas-Choctaw boundary line, closing corner Ts. 11 and 12 N., R. 27 E., iron post.....	764. 098
Arkansas-Choctaw boundary line, closing corner Ts. 10 and 11 N., R. 27 E., iron post.....	435. 875
Corner Ts. 10 and 11 N., Rs. 26 and 27 E., iron post.....	418. 425
Corner Ts. 9 and 10 N., Rs. 26 and 27 E., iron post.....	421. 073
Arkansas-Choctaw boundary line, closing corner Ts. 9 and 10 N., R. 27 E., iron post.....	513. 2
Arkansas boundary line. closing corner second standard parallel north, R. 27 E., iron post.....	555. 16
Standard corner T. 9 N., Rs. 26 and 27 E., iron post.....	620. 01
Arkansas-Choctaw boundary line, closing corner Ts. 7 and 8 N., R. 27 E., iron post.....	611. 302
Arkansas-Choctaw boundary line, closing corner Ts. 6 and 7 N., R. 27 E., iron post.....	1, 388. 956

POTEAU MOUNTAIN QUADRANGLE (ARKANSAS-INDIAN TERRITORY).

Mr. E. M. Fry ran the railroad levels. Mr. W. P. Halliday was attached to the subdivision and topographic party of Mr. W. S. Post, and Mr. E. M. Fry to Mr. R. A. Farmer's party.

ON KANSAS CITY, PITTSBURG AND GULF RAILROAD.

	Feet.
Page, 5 miles south of; intersection of railroad with Arkansas-Choctaw boundary line, iron post.....	1, 223. 405

ALONG TOWNSHIP LINES.

Arkansas-Choctaw boundary line, closing corner Ts. 5 and 6 N., R. 27 E., iron post.....	1, 615. 97
Arkansas-Choctaw boundary line, closing corner Ts. 4 and 5 N., R. 27 E., corner stone.....	690. 164
Arkansas-Choctaw boundary line, closing corner Ts. 1 N. and 1 S., R. 27 E., corner stone.....	948. 219

WINDING STAIR QUADRANGLE.

Messrs. R. Coe, G. A. Purington, H. C. McCluer, and E. M. Fry ran the railroad levels. Mr. F. E. Fellows had an independent level party. Messrs. G. A. Purington and E. M. Fry were attached to the topographic and subdivision party of Mr. R. A. Farmer, and Messrs. W. P. Halliday and G. H. Bartlett to that of Mr. W. S. Post.

ALONG THE CHOCTAW, OKLAHOMA AND GULF RAILROAD, FROM
WISTER TO FANSHAW.

	Feet.
Wister; post oak, 24 inches in diameter, in the northeast angle of the Choctaw, Oklahoma and Gulf, and the St. Louis and San Francisco railroads, 150 feet from the Choctaw, Oklahoma and Gulf, and 350 feet from the St. Louis and San Francisco track.....	474. 072

	Feet.
Wister, $\frac{1}{2}$ mile west of; square hole in south coping stone of east abutment of bridge No. 1.....	480. 908
Wister, $1\frac{1}{2}$ miles west of; square hole in north coping stone of east abutment of bridge No. 7, 500 feet west of milepost 214.....	497. 298
Fanshawe, 2 miles east of; square hole in north coping stone of east abutment of bridge near milepost 207.....	553. 651
Fanshawe, $\frac{1}{2}$ mile west of; red oak, 16 inches in diameter, 120 feet right of track and 100 feet west of milepost 205.....	554. 486
Fanshawe, 3 miles west of; elm, 18 inches in diameter, 130 feet right and 200 feet west of milepost 202.....	543. 944

ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD FROM
CAVANAL TO LEFLORE.

Cavanal; post oak, 24 inches in diameter, 180 feet left of track, nearly opposite milepost 451.....	468. 963
Wister, $\frac{1}{2}$ mile west of; square hole cut into south coping stone of east pier of bridge 237 T.....	472. 701
Wister, 1 mile southwest of; black oak, 8 inches in diameter, 150 feet south and 75 feet east of milepost 454.....	478. 136
Caston; white oak, 30 inches in diameter, 60 feet right of track, opposite milepost 456.....	494. 889
Pocahontas; red oak, 20 inches in diameter, 120 feet north and 100 west of milepost 458.....	562. 022
Folsom; white oak 16 inches in diameter, 100 feet south of track, opposite milepost 463.....	490. 631
Leflore; elm 10 inches in diameter, 90 feet south and 100 feet east of station building.....	532. 477

ALONG THE KANSAS CITY, PITTSBURG AND GULF RAILROAD FROM
HEAVENER TO PAGE.

Heavener, 2 miles north of; at the intersection of the railroad with the north boundary of T. 5 N., R. 25 E., iron post.....	512. 224
Heavener, 1 mile north of; copper bolt set into east coping stone of north abutment bridge over drain.....	565. 278
Heavener, 1 mile south of; 650 feet south of milepost 338, iron post.....	553. 226
Houston, 3 miles north of; at the intersection of the railroad with the first standard parallel north, near milepost 342, iron post.....	504. 338
Houston, $\frac{1}{2}$ mile south of; copper bolt set into east coping stone of north abutment bridge over drain.....	540. 341
Thomasville, $\frac{1}{2}$ mile south of; copper bolt set into west coping stone of north abutment bridge over creek.....	656. 966
Page, $\frac{1}{2}$ mile south of; root of a basswood 16 inches in diameter and 60 feet west of track and 35 feet south of mile-pole 355.....	927. 355

ALONG TOWNSHIP LINES.

Corner Ts. 5 and 6 N., Rs. 26 and 27 E., iron post.....	980. 967
Corner Ts. 5 and 6 N., Rs. 25 and 26 E., iron post.....	499. 297
Corner Ts. 5 and 6 N., Rs. 24 and 25 E., iron post.....	456. 937
Corner Ts. 5 and 6 N., Rs. 23 and 24 E., iron post.....	521. 117
Corner Ts. 5 and 6 N., Rs. 22 and 23 E., iron post.....	551. 271
Closing corner T. 4 N., Rs. 22 and 23 E., on stone.....	913. 544
Standard corner T. 5 N., Rs. 22 and 23 E., iron post.....	722. 694
Closing corner T. 4 N., Rs. 23 and 24 E., iron post.....	586. 036

	Feet
Standard corner T. 5 N., Rs. 23 and 24 E., on stone.....	640. 234
Closing corner T. 4 N., Rs. 24 and 25 E., on stone	575. 924
Standard corner T. 5 N., Rs. 24 and 25 E., iron post.....	541. 044
Closing corner T. 4 N., Rs. 25 and 26 E., iron post.....	507. 544
Standard corner T. 5 N., Rs. 25 and 26 E., iron post.....	503. 334
Closing corner T. 4 N., Rs. 26 and 27 E., iron post.....	566. 264
Standard corner T. 5 N., Rs. 26 and 27 E., iron post.....	577. 884
Corner Ts. 3 and 4 N., Rs. 26 and 27 E., iron post	703. 372
Corner Ts. 3 and 4 N., Rs. 25 and 26 E., iron post	598. 842
Corner Ts. 3 and 4 N., Rs. 24 and 25 E., iron post	951. 786
Corner Ts. 3 and 4 N., Rs. 23 and 24 E., iron post	1, 172. 571
Corner Ts. 3 and 4 N., Rs. 22 and 23 E., iron post	1, 023. 659
Corner Ts. 2 and 3 N., Rs. 22 and 23 E., iron post	641. 008
Corner Ts. 2 and 3 N., Rs. 23 and 24 E., iron post	686. 451
Corner Ts. 2 and 3 N., Rs. 24 and 25 E., iron post	910. 872
Corner Ts. 2 and 3 N., Rs. 25 and 26 E., iron post	2, 471. 012
Corner Ts. 2 and 3 N., Rs. 26 and 27 E., iron post	1, 271. 821
Corner Ts. 1 and 2 N., Rs. 26 and 27 E., iron post	1, 977. 796
Corner Ts. 1 and 2 N., Rs. 25 and 26 E., iron post	1, 922. 366
Corner Ts. 1 and 2 N., Rs. 24 and 25 E., iron post	1, 478. 558
Corner Ts. 1 and 2 N., Rs. 23 and 24 E., iron post	1, 279. 457
Corner Ts. 1 and 2 N., Rs. 22 and 23 E., iron post	1, 344. 108
Closing corner T. 1 S., Rs. 22 and 23 E., iron post	1, 394. 063
Standard corner T. 1 N., Rs. 22 and 23 E., iron post	1, 382. 122
Closing corner T. 1 S., Rs. 23 and 24 E., iron post	1, 635. 612
Standard corner T. 1 N., Rs. 23 and 24 E., iron post	1, 756. 266
Triangulation station, base line, sec. 31, T. 1 N., R. 24 E., near southwest corner of the SW. $\frac{1}{4}$, white oak 10 inches diameter, same having been used as signal tree	1, 989. 063
Closing corner T. 1 S., Rs. 24 and 25 E., iron post	888. 039
Standard corner T. 1 N., Rs. 24 and 25 E., iron post	874. 773
Closing corner T. 1 S., Rs. 25 and 26 E., iron post.....	866. 809
Standard corner T. 1 N., Rs. 25 and 26 E., on stone.....	896. 989
Closing corner T. 1 S., Rs. 26 and 27 E., iron post	940. 459
Standard corner T. 1 N., Rs. 26 and 27 E., on stone.....	904. 129

TUSKAHOMA QUADRANGLE.

Messrs. R. Coe, H. C. McCluer, and G. A. Purington ran the railroad levels. Messrs. E. L. Faison and F. E. Fellows had independent level parties. Messrs. W. P. Halliday and G. H. Bartlett were attached to the topographic and subdivision party of Mr. W. S. Post, and Messrs. W. A. Correll, C. Doster, W. S. D. Moore, G. A. Purington, and E. M. Fry to the party of Mr. G. S. Smith, who was relieved by Mr. W. B. Corse, and he by Mr. R. A. Farmer.

ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD FROM
BENGAL TO STANLEY.

	Feet.
Bengal, $\frac{1}{2}$ mile northeast of; red oak 15 inches diameter, 60 feet left of track and 210 feet south of milepost 475.....	626. 67
Compton, $\frac{2}{3}$ mile southwest of; near top of west end of north abutment of bridge 286, copper bolt.....	906. 631

	Feet.
Talihina; black gum 10 inches diameter, 60 feet left of track and 100 feet south of milepost 484	673. 947
Albion; post oak 20 inches diameter, 60 feet left of track and 400 feet south of milepost 490	654. 875
Kiamichi, $\frac{2}{3}$ mile northeast of; post oak 15 inches diameter, 40 feet right of track and 50 feet north of milepost 495	602. 945
Tuskahoma; in northeast corner of foundation of water tank, copper bolt.	568. 616
Clayton, $\frac{2}{3}$ mile northeast of; post oak 10 inches diameter, 60 feet right of track and 80 feet northwest of milepost 506, near intersection with the north boundary of T. 1 N., R. 19 E.	574. 944
Elzey, $\frac{1}{2}$ mile northeast of; red oak 24 inches diameter, 50 feet right of track and 400 feet north of milepost 510.	535. 34
Stanley; hickory 10 inches diameter, 60 feet left of track and 440 feet southwest of milepost 514	516. 283

ALONG THE CHOCTAW, OKLAHOMA AND GULF RAILROAD FROM
REDOAK TO GAINES CREEK.

Redoak, $\frac{2}{3}$ mile west of; post oak, 105 feet right of track and 165 feet west of milepost 195	594. 22
Panola, 5 miles west of; post oak 22 inches diameter, 110 feet right of track and 165 feet west of milepost 191	614. 509
Panola, $\frac{1}{3}$ mile east of; first coping stone of northwest pier of bridge 61, copper bolt	623. 368
Bridge 65; square hole cut into first coping stone of north end of west abutment	591. 636
Wilburton; water elm 9 inches diameter, 285 feet east and 125 feet north of milepost 182, near bridge 73	647. 096
Wilburton, 2 miles west of; coping stone of north end west abutment of bridge 77, copper bolt	677. 327
Wilburton, 4 miles west of; square hole cut into stone at northeast corner of north end of culvert, 30 feet east of milepost 178.	675. 832
Wilburton, 7 miles west of; south end of east abutment of bridge 80, near milepost 175, copper bolt set in stone	632. 635
Bridge 90 (over Gaines Creek); square hole cut into north end of west abutment.	639. 747

ALONG TOWNSHIP LINES.

Corner Ts. 5 and 6 N., Rs. 21 and 22 E., iron post	549. 351
Corner Ts. 5 and 6 N., Rs. 20 and 21 E., iron post	699. 621
Corner Ts. 5 and 6 N., Rs. 19 and 20 E., iron post	884. 762
Corner Ts. 5 and 6 N., Rs. 18 and 19 E., iron post	624. 472
Corner Ts. 5 and 6 N., Rs. 17 and 18 E., iron post	702. 602
Closing corner T. 4 N., Rs. 17 and 18 E., iron post	628. 038
Standard corner T. 5 N., Rs. 17 and 18 E., iron post	622. 89
Closing corner T. 4 N., Rs. 18 and 19 E., iron post	1, 342. 745
Standard corner T. 5 N., Rs. 18 and 19 E., iron post	1, 228. 141
Closing corner T. 4 N., Rs. 19 and 20 E., iron post	839. 385
Standard corner T. 5 N., Rs. 19 and 20 E., iron post	806. 075
Closing corner T. 4 N., Rs. 20 and 21 E., iron post	759. 274
Standard corner T. 5 N., Rs. 20 and 21 E., iron post	740. 274
Closing corner T. 4 N., Rs. 21 and 22 E., iron post	841. 214
Standard corner T. 5 N., Rs. 21 and 22 E., iron post	797. 724

	Feet.
Corner Ts. 3 and 4 N., Rs. 21 and 22 E., iron post	715. 576
Corner Ts. 3 and 4 N., Rs. 20 and 21 E., iron post.....	1, 802. 133
Corner Ts. 3 and 4 N., Rs. 19 and 20 E., iron post.....	1, 058. 955
Corner Ts. 3 and 4 N., Rs. 18 and 19 E., iron post.....	902. 585
Corner Ts. 3 and 4 N., Rs. 17 and 18 E., iron post.....	839. 716
Corner Ts. 2 and 3 N., Rs. 17 and 18 E., iron post.....	1, 043. 945
Corner Ts. 2 and 3 N., Rs. 18 and 19 E., iron post.....	598. 525
Corner Ts. 2 and 3 N., Rs. 19 and 20 E., iron post.....	893. 805
Corner Ts. 2 and 3 N., Rs. 20 and 21 E., iron post.....	1, 094. 81
Corner Ts. 2 and 3 N., Rs. 21 and 22 E., iron post.....	657. 34
Corner Ts. 1 and 2 N., Rs. 21 and 22 E., iron post.....	1, 534. 624
Corner Ts. 1 and 2 N., Rs. 20 and 21 E., iron post.....	1, 501. 784
Corner Ts. 1 and 2 N., Rs. 19 and 20 E., iron post.....	1, 334. 355
Corner Ts. 1 and 2 N., Rs. 18 and 19 E., iron post.....	622. 3
Corner Ts. 1 and 2 N., Rs. 17 and 18 E., iron post.....	1, 344. 5
Closing corner T. 1 S., Rs. 17 and 18 E., iron post	722. 605
Standard corner T. 1 N., Rs. 17 and 18 E., iron post.....	680. 64
Closing corner T. 1 S., Rs. 18 and 19 E., iron post.....	1, 064. 64
Standard corner T. 1 N., Rs. 18 and 19 E., iron post.....	1, 090. 69
Closing corner T. 1 S., Rs. 19 and 20 E., iron post.....	1, 081. 985
Standard corner T. 1 N., Rs. 19 and 20 E., iron post.....	978. 41
Closing corner T. 1 S., Rs. 20 and 21 E., iron post.....	1, 167. 597
Standard corner T. 1 N., Rs. 20 and 21 E., iron post.....	960. 317
Closing corner T. 1 S., Rs. 21 and 22 E., iron post.....	754. 033
Standard corner T. 1 N., Rs. 21 and 22 E., iron post.....	803. 332

McALESTER QUADRANGLE.

Messrs. E. L. Faison, G. A. Purington, and H. C. McCluer ran the railroad levels. Messrs. T. C. Catchings, H. L. Muldrow, F. E. Fellows, E. L. Faison, and W. S. D. Moore had independent level parties. Messrs. W. A. Correll and Chase Doster were attached to the topographic and subdivision party of Mr. G. S. Smith, and Messrs. G. A. Purington and W. S. D. Moore were with that of Mr. W. B. Corse for a time.

FROM M'ALESTER, ALONG THE MISSOURI, KANSAS AND TEXAS RAILWAY, TO LIMESTONE GAP.

	Feet.
McAlester, $\frac{1}{2}$ mile north of; copper bolt set into stone culvert, 250 feet north of mile pole 564.....	677. 606
South McAlester; iron post in northwest angle of the Choctaw, Oklahoma and Gulf and Missouri, Kansas and Texas railroads, 49.42 feet west from the southwest corner of the Union Station	716. 034
South McAlester; bronze tablet set into second base stone, 9.7 feet from southwest corner of the Kali-Inla Building, on side of Front street facing south, which building is owned by the Choctaw, Oklahoma and Gulf Railroad Company	722. 36
Frink; nail in hickory 14 inches diameter, 60 feet right of track and 50 feet south of mile pole 569	753. 303
Savanna, $\frac{1}{3}$ mile south of; spike in telegraph pole at mile board 575	701. 289
Kiowa; nail in post oak, 30 inches diameter, 50 feet left of track and 200 feet north of mile pole 583.....	738. 612
Limestone Gap; nail in elm 18 inches diameter, 225 feet right of track and directly behind mile pole 591.....	641. 127

FROM HARTSHORNE, ALONG THE CHOCTAW, OKLAHOMA AND
GULF RAILROAD, TO BARNETT.

	Feet.
Bridge 93; square hole cut into stone on south end of west abutment.....	645. 662
Hartshorne; bronze tablet set into fourth stone above the foundation course, at the northeast corner of stone building owned by F. M. Sav- age, situated on Pennsylvania avenue, 125 feet west of west line of Fifth street, 670 feet south of main line of railroad, and 2,500 feet east of post- office building.....	703. 939
Hartshorne, 13 miles west of; copper bolt in north end of culvert, 650 feet west of mine No. 1.....	676. 235
Hartshorne, 2 miles west of; copper bolt set into stone on north end of parapet wall of bridge 106.....	606. 708
Alderson; copper bolt set into north end of west abutment of bridge 112..	680. 853
Alderson, 1 mile west of; square hole cut into stone on south end of west abutment of bridge 117, 75 feet east of mile pole 156	648. 805
Krebs, $\frac{1}{2}$ mile west of; square hole cut into stone on southeast corner of east abutment of bridge 124	718. 168
McAlester, 6 miles west of; cross (+) mark on top stone of west pier of bridge 206, 150 feet west of mile pole 145.....	650. 852
Barnett, $\frac{2}{3}$ mile east of; bronze tablet set into southwest corner of top stone of west pier of bridge 198, 550 feet west of mile pole 141, 10 miles west of McAlester	701. 142

ON ST. LOUIS AND SAN FRANCISCO RAILROAD.

Butler, 4 miles north of; nail in red oak, 8 inches diameter, 40 feet left of track and 60 feet north of mile pole 518, near the intersection of the railroad with the base line	513. 589
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ALONG TOWNSHIP LINES.

Corner Ts. 5 and 6 N., Rs. 12 and 13 E., iron post	764. 15
Corner Ts. 5 and 6 N., Rs. 13 and 14 E., iron post	623. 978
Corner Ts. 5 and 6 N., Rs. 14 and 15 E., iron post	719. 724
Corner Ts. 5 and 6 N., Rs. 15 and 16 E., iron post	602. 946
Corner Ts. 5 and 6 N., Rs. 16 and 17 E., iron post	678. 867
Standard corner T. 5 N., Rs. 16 and 17 E., iron post.....	668. 363
Closing corner T. 4 N., Rs. 16 and 17 E., iron post.....	668. 615
Standard corner T. 5 N., Rs. 15 and 16 E., iron post	623. 839
Closing corner T. 4 N., Rs. 15 and 16 E., iron post.....	622. 725
Standard corner T. 5 N., Rs. 14 and 15 E., iron post	794. 655
Closing corner T. 4 N., Rs. 14 and 15 E., iron post	810. 525
Standard corner T. 5 N., Rs. 13 and 14 E., iron post	782. 853
Closing corner T. 4 N., Rs. 13 and 14 E., iron post	798. 279
Standard corner T. 5 N., Rs. 12 and 13 E., iron post	705. 382
Closing corner T. 4 N., Rs. 12 and 13 E., iron post	699. 261
Corner Ts. 3 and 4 N., Rs. 12 and 13 E., iron post	781. 088
Corner Ts. 3 and 4 N., Rs. 13 and 14 E., iron post	731. 686
Corner Ts. 3 and 4 N., Rs. 14 and 15 E., iron post	787. 461
Corner Ts. 3 and 4 N., Rs. 15 and 16 E., iron post	759. 212
Corner Ts. 3 and 4 N., Rs. 16 and 17 E., iron post	925. 96
Corner Ts. 2 and 3 N., Rs. 16 and 17 E., iron post	704. 692
Corner Ts. 2 and 3 N., Rs. 15 and 16 E., iron post	888. 43
Corner Ts. 2 and 3 N., Rs. 14 and 15 E., iron post	1, 068. 734

	Feet.
Corner Ts. 2 and 3 N., Rs. 13 and 14 E., iron post	773. 199
Corner Ts. 2 and 3 N., Rs. 12 and 13 E., iron post	718. 35
Corner Ts. 1 and 2 N., Rs. 12 and 13 E., iron post	824. 747
Corner Ts. 1 and 2 N., Rs. 13 and 14 E., iron post	789. 85
Corner Ts. 1 and 2 N., Rs. 14 and 15 E., iron post	996.
Corner Ts. 1 and 2 N., Rs. 15 and 16 E., iron post	1, 025.
Corner Ts. 1 and 2 N., Rs. 16 and 17 E., iron post	703.
Standard corner T. 1 N., Rs. 16 and 17 E., iron post	1, 016. 855
Closing corner T. 1 S., Rs. 16 and 17 E., iron post	975. 854
Standard corner T. 1 N., Rs. 15 and 16 E., iron post	1, 081. 443
Closing corner T. 1 S., Rs. 15 and 16 E., iron post	1, 038. 518
Standard corner T. 1 N., Rs. 14 and 15 E., iron post	969. 031
Closing corner T. 1 S., Rs. 14 and 15 E., iron post	964. 431
Standard corner T. 1 N., Rs. 13 and 14 E., iron post	748. 611
Closing corner T. 1 S., Rs. 13 and 14 E., iron post	755. 499
Standard corner T. 1 N., Rs. 12 and 13 E., iron post	660. 205
Closing corner T. 1 S., Rs. 12 and 13 E., iron post	657. 105

COALGATE QUADRANGLE.

The railroad levels were run by Messrs. G. A. Purington, W. R. Manning, and E. L. Faison. Messrs. R. Coe, T. C. Catchings, F. E. Fellows, and W. S. D. Moore had independent level parties, while Mr. J. P. Walker was attached to the topographic and subdivision party of Mr. Jeremiah Ahern, and Mr. H. L. Muldrow, jr., to that of Mr. R. H. McKee.

FROM STUART, ALONG THE CHOCTAW, OKLAHOMA AND GULF RAILROAD, TO CALVIN.

	Feet.
Stuart, 3 miles east of; square hole cut in northwest corner of top stone on the south side of west pier of bridge No. 187	692. 225
Stuart, 1 mile east of; square hole cut in large stone 300 feet west of bridge No. 186, and 40 feet north of track near entrance to "cut"	708. 088
Stuart; iron post 60 feet north of track, 100 feet east of station, and south post-office	721. 885
Calvin, 2 miles east of; iron spike in mile pole No. 123	706. 711
Calvin; iron post south of track, in line of telegraph poles, 210 feet west of Calvin station ticket-office window	714. 693
Calvin, 4 miles west of; iron spike in mile pole No. 117	710. 564

ON THE MISSOURI, KANSAS AND TEXAS RAILWAY.

Chili; post oak 30 inches in diameter, 60 feet left of track and 450 feet south of mile pole No. 596	663. 655
Chili, 3 miles south of; elm 10 inches in diameter, 100 feet right of track, and 700 feet north of mile pole No. 599	617. 53

ON COALGATE BRANCH OF MISSOURI, KANSAS AND TEXAS RAILWAY.

Coalgate; iron post flush with ground at the southeast corner of station building, 50 feet east of track	614. 637
Coalgate; bronze tablet set into layer of foundation stone, 8 inches above the ground at the northwest corner of building owned by Cooperative Company, situated on Broadway street, about 400 feet southwest of railway station building	614. 714

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 5 and 6 N., Rs. 8 and 9 E., iron post	896.761
Corner Ts. 5 and 6 N., Rs. 9 and 10 E., iron post	794.612
Corner Ts. 5 and 6 N., Rs. 10 and 11 E., iron post	818.931
Corner Ts. 5 and 6 N., Rs. 11 and 12 E., iron post	955.882
Standard corner T. 5 N., Rs. 11 and 12 E., iron post	784.122
Closing corner T. 4 N., Rs. 11 and 12 E., iron post	766.978
Standard corner T. 5 N., Rs. 10 and 11 E., iron post	888.106
Closing corner T. 4 N., Rs. 10 and 11 E., iron post	891.46
Standard corner T. 5 N., Rs. 9 and 10 E., iron post	823.922
Closing corner T. 4 N., Rs. 9 and 10 E., iron post	824.039
Standard corner T. 5 N., Rs. 8 and 9 E., iron post	892.731
Choctaw-Chickasaw boundary line, closing corner Ts. 4 and 5 N., R. 8 E., iron post	785.609
Choctaw-Chickasaw boundary line, closing corner Ts. 3 and 4 N., R. 8 E., iron post	760.77
Corner Ts. 3 and 4 N., Rs. 8 and 9 E., iron post	693.706
Corner Ts. 3 and 4 N., Rs. 9 and 10 E., iron post	710.782
Corner Ts. 3 and 4 N., Rs. 10 and 11 E., iron post	770.941
Corner Ts. 3 and 4 N., Rs. 11 and 12 E., iron post	699.131
Corner Ts. 2 and 3 N., Rs. 11 and 12 E., iron post	691.794
Corner Ts. 2 and 3 N., Rs. 10 and 11 E., iron post	663.661
Corner Ts. 2 and 3 N., Rs. 9 and 10 E., iron post	640.794
Corner Ts. 2 and 3 N., Rs. 8 and 9 E., iron post	697.741
Choctaw-Chickasaw boundary line, closing corner Ts. 2 and 3 N., R. 8 E., iron post	727.957
Choctaw-Chickasaw boundary line, closing corner Ts. 1 and 2 N., R. 8 E., iron post	628.752
Corner Ts. 1 and 2 N., Rs. 8 and 9 E., iron post	674.74
Corner Ts. 1 and 2 N., Rs. 9 and 10 E., iron post	664.744
Corner Ts. 1 and 2 N., Rs. 10 and 11 E., iron post	626.753
Corner Ts. 1 and 2 N., Rs. 11 and 12 E., iron post	640.758
Standard corner T. 1 N., Rs. 11 and 12 E., iron post	679.548
Standard corner T. 1 N., Rs. 10 and 11 E., iron post	563.579
Standard corner T. 1 N., Rs. 9 and 10 E., iron post	657.084
Standard corner T. 1 N., Rs. 8 and 9 E., iron post	649.255
Choctaw-Chickasaw boundary line, closing corner Ts. 1 N. and 1 S., R. 8 E., iron post	732.941

ALONG THE CHICKASAW-CHOCTAW BOUNDARY LINE.

Closing corner of Chickasaw Survey, on Chickasaw-Choctaw boundary, between Ts. 1 and 2 N., R. 8 E., iron post	629.258
Closing corner of Chickasaw Survey, on Chickasaw-Choctaw boundary, between Ts. 2 and 3 N., R. 8 E., iron post	728.503
Closing corner of Chickasaw Survey, on Chickasaw-Choctaw boundary, between Ts. 3 and 4 N., R. 8 E., iron post	760.547
Closing corner of Chickasaw Survey, on Chickasaw-Choctaw boundary, between Ts. 4 and 5 N., R. 8 E., iron post	777.995

STONEWALL QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

Messrs. W. R. Manning and W. S. D. Moore had charge of independent level parties. Mr. J. P. Walker was attached to the subdivision and topographic party of Mr. Jeremiah Ahern, while Mr. E. M. Fry was with Mr. R. A. Farmer's party, and Mr. H. L. Muldrow, jr., with Mr. R. H. McKee's party.

ALONG TOWNSHIP AND SECTION LINES.

	Feet.
Canadian River, meander corner on; between T. 5 N., R. 3 E., sec. 2, and T. 6 N., R. 3 E., sec. 35, iron post	916.65
Canadian River, meander corner on; between T. 6 N., R. 3 E., sec. 25, and T. 6 N., R. 4 E., sec. 30, iron post	905.28
Corner Ts. 5 and 6 N., Rs. 3 and 4 E., iron post	1,025.43
Canadian River, meander corner on; between T. 5 N., R. 4 E., sec. 5, and T. 6 N., R. 4 E., sec. 32, iron post	896.85
Canadian River, meander corner on; between T. 5 N., R. 4 E., sec. 1, and T. 5 N., R. 5 E., sec. 6, iron post	878.794
Seminole-Oklahoma boundary, closing corner on; between fractional Ts. 5 and 6 N., R. 5 E., iron post	1,054.695
Corner Ts. 5 and 6 N., Rs. 5 and 6 E., iron post	929.989
Corner Ts. 5 and 6 N., Rs. 6 and 7 E., iron post	889.552
Corner Ts. 5 and 6 N., Rs. 7 and 8 E., iron post	850.683
Standard corner T. 5 N., Rs. 7 and 8 E., iron post	918.331
Closing corner T. 4 N., Rs. 7 and 8 E., iron post	947.576
Standard corner T. 5 N., Rs. 6 and 7 E., iron post	955.867
Closing corner T. 4 N., Rs. 6 and 7 E., iron post	946.223
Standard corner T. 5 N., Rs. 5 and 6 E., iron post	896.745
Closing corner T. 4 N., Rs. 5 and 6 E., iron post	884.069
Standard corner T. 5 N., Rs. 4 and 5 E., iron post	999.868
Closing corner T. 4 N., Rs. 4 and 5 E., iron post	1,006.824
Standard corner T. 5 N., Rs. 3 and 4 E., iron post	1,094.94
Closing corner T. 4 N., Rs. 3 and 4 E., iron post	1,081.925
Corner Ts. 3 and 4 N., Rs. 3 and 4 E., iron post	1,083.302
Corner Ts. 3 and 4 N., Rs. 4 and 5 E., iron post	974.885
Corner Ts. 3 and 4 N., Rs. 5 and 6 E., iron post	932.219
Corner Ts. 3 and 4 N., Rs. 6 and 7 E., iron post	966.648
Corner Ts. 3 and 4 N., Rs. 7 and 8 E., iron post	843.572
Corner Ts. 2 and 3 N., Rs. 7 and 8 E., iron post	751.493
Corner Ts. 2 and 3 N., Rs. 6 and 7 E., iron post	750.477
Corner Ts. 2 and 3 N., Rs. 5 and 6 E., iron post	1,049.052
Corner Ts. 2 and 3 N., Rs. 4 and 5 E., iron post	1,169.605
Corner Ts. 2 and 3 N., Rs. 3 and 4 E., iron post	1,168.524
Corner Ts. 1 and 2 N., Rs. 3 and 4 E., iron post	1,078.938
Corner Ts. 1 and 2 N., Rs. 4 and 5 E., iron post	1,253.431
Corner Ts. 1 and 2 N., Rs. 5 and 6 E., iron post	1,139.508
Corner Ts. 1 and 2 N., Rs. 6 and 7 E., iron post	822.716
Corner Ts. 1 and 2 N., Rs. 7 and 8 E., iron post	745.122
Standard corner T. 1 N., Rs. 7 and 8 E., iron post	793.223
Standard corner T. 1 N., Rs. 6 and 7 E., iron post	1,061.658
Standard corner T. 1 N., Rs. 5 and 6 E., iron post	1,098.691
Standard corner T. 1 N., Rs. 4 and 5 E., iron post	1,159.841
Closing corner T. 1 S., Rs. 4 and 5 E., iron post	1,155.909
Standard corner T. 1 N., Rs. 3 and 4 E., iron post	1,198.234
Closing corner T. 1 S., Rs. 3 and 4 E., iron post	1,194.88

PAULS VALLEY QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

Messrs. R. Coe and A. F. Hassan ran the railroad levels. Mr. W. R. Manning had an independent level party. Messrs. W. S. D. Moore, G. Given, and E. M. Fry were attached to the subdivision and topographic party of Mr. R. A. Farmer, and Mr. J. H. Carlock to that of Mr. C. W. Goodlove.

FROM DAVIS, NORTH ALONG GULF, COLORADO AND SANTA FE
RAILWAY, TO WAYNE.

	Feet.
Davis, $\frac{1}{4}$ mile north of; iron post set at intersection of Indian base line with the line of telegraph poles adjacent to railway, and about 28 feet west of center of track, and 48 feet north of tenth telegraph pole north of mile pole 478.....	838.434
Wynnewood, $3\frac{1}{2}$ miles south of; iron post at intersection of the railway with the north boundary T. 1 N., R. 1 E., and 24 feet west of center of track, and in line with telegraph poles.....	820.317
Wynnewood; bronze tablet set in foundation stone of Citizen's Bank building, 12 feet south of northeast corner of building, which is situated on Cherokee street and Guy avenue.....	862.616
Wynnewood, $2\frac{3}{4}$ miles north of; iron post set at intersection of railway with north boundary T. 2 N., R. 1 E., and 33 feet west of center of track and in line with telegraph poles, and about 3 poles south of mile pole 491.....	843.292
Pauls Valley; bronze tablet in center of east face of second stone above foundation at northeast corner of stone building owned by C. J. Grant, situated at corner of Paul and Santa Fe avenues.....	871.182
Pauls Valley, $2\frac{1}{2}$ miles northwest of; iron post, set 12 inches out of ground, at the corner of Ts. 3 and 4 N., Rs. 1 E. and 1 W., about 900 feet west of railway.....	882.772
Paoli, 2 miles north of; iron post, 9 inches out of ground, at witness corner to $\frac{1}{4}$ section corner of sec. 36, T. 5 N., R. 1 W., and 300 feet east of intersection of railway with first standard parallel north.....	933.189
Wayne; railroad spike in fifth telegraph pole south of station building and second pole north of mile pole 510.....	1,097.466

ALONG TOWNSHIP AND SECTION LINES.

Corner Ts. 5 and 6 N., Rs. 2 and 3 W., iron post.....	1,075.851
Corner Ts. 5 and 6 N., Rs. 1 and 2 W., iron post.....	1,119.411
Corner Ts. 5 and 6 N., Rs. 1 E. and 1 W., iron post.....	997.561
Canadian River; meander corner on T. 6 N., Rs. 1 E. and 1 W., secs. 31 and 36, iron post.....	988.041
Canadian River, meander corner on; between T. 5 N., R. 1 E., sec. 1, and T. 5 N., R. 2 E., sec. 6, iron post.....	967.577
Canadian River, meander corner on; between T. 5 N., R. 2 E., sec. 13, and T. 5 N., R. 3 E., sec. 18, iron post.....	937.053
Standard corner T. 5 N., Rs. 2 and 3 E., iron post.....	1,021.873
Closing corner T. 4 N., Rs. 2 and 3 E., iron post.....	1,013.892
Standard corner T. 5 N., Rs. 1 and 2 E., iron post.....	1,063.907
Closing corner T. 4 N., Rs. 1 and 2 E., iron post.....	1,052.255
Indian meridian, standard corner Ts. 4 and 5 N., Rs. 1 E. and 1 W., at intersection of the first standard parallel north with the, iron post.....	947.571
Closing corner T. 4 N., Rs. 1 and 2 W., iron post.....	1,023.479
Standard corner T. 5 N., Rs. 1 and 2 W., iron post.....	1,011.619
Closing corner T. 4 N., Rs. 2 and 3 W., iron post.....	980.159
Standard corner T. 5 N., Rs. 2 and 3 W., iron post.....	986.349
Corner Ts. 3 and 4 N., Rs. 2 and 3 W., iron post.....	988.152
Corner Ts. 3 and 4 N., Rs. 1 and 2 W., iron post.....	977.882
Corner Ts. 3 and 4 N., Rs. 1 and 2 E., iron post.....	920.582

	Feet.
Corner Ts. 3 and 4 N., Rs. 2 and 3 E., iron post	1,040.562
Corner Ts. 2 and 3 N., Rs. 2 and 3 E., iron post	1,104.464
Corner Ts. 2 and 3 N., Rs. 1 and 2 E., iron post	870.954
Corner Ts. 2 and 3 N., Rs. 1 E. and 1 W., iron post	890.792
Corner Ts. 2 and 3 N., Rs. 1 and 2 W., iron post	1,051.402
Corner Ts. 2 and 3 N., Rs. 2 and 3 W., iron post	1,091.122
Corner Ts. 1 and 2 N., Rs. 2 and 3 W., iron post	983.612
Corner Ts. 1 and 2 N., Rs. 1 and 2 W., iron post	939.652
Corner Ts. 1 and 2 N., Rs. 1 E. and 1 W., iron post	875.342
Corner Ts. 1 and 2 N., Rs. 1 and 2 E., iron post	839.468
Corner Ts. 1 and 2 N., Rs. 2 and 3 E., iron post	1,047.678
Standard corner T. 1 N., Rs. 2 and 3 E., iron post	944.134
Closing corner T. 1 S., Rs. 2 and 3 E., iron post	936.402
Standard corner T. 1 N., Rs. 1 and 2 E., iron post	786.783
Closing corner T. 1 S., Rs. 1 and 2 E., iron post	788.531
Indian meridian and Indian base, corner Ts. 1 N. and 1 S., Rs. 1 E. and 1 W.; a copper bolt set in rock in place, 4 feet south of initial point, at the intersection of the	1,040.137
Standard corner T. 1 N., Rs. 1 and 2 W., iron post	967.267
Closing corner T. 1 S., Rs. 2 and 3 W., iron post	930.617
Standard corner T. 1 N., Rs. 2 and 3 W., iron post	925.147

RUSH SPRINGS QUADRANGLE.

The railroad levels were run by Mr. R. Coe. Messrs. E. M. Fry and W. S. D. Moore were attached to the subdivision and topographic party of Mr. R. A. Farmer, and Messrs. J. P. Thayer and J. P. Walker and H. L. Baker were with Mr. A. D. Morton's party. Mr. W. R. Manning had charge of an independent party and ran a few miles on the base line.

FROM NINNEKAH, SOUTH ALONG CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY, TO DUNCAN.

	Feet.
Ninnekah, $\frac{3}{4}$ mile south of; railroad spike in telegraph mile pole 444, which is 200 feet south of north boundary T. 5 N., R. 7 W.	1,100.358
Rush Springs, 6 miles north of; iron post, 10 inches out of ground, on first standard parallel north, between T. 4 N., R. 7 W., sec. 4, and T. 5 N., R. 7 W., sec. 33, and is 37.9 feet west of track and 15.3 feet south of 20th telegraph pole north of mile pole 451	1,291.676
Rush Springs; bronze tablet in middle of northeast face of second stone above sidewalk and on left side of main entrance to the Masonic building. This bench mark is 1 mile north of township line	1,349.054
Marlow, $2\frac{1}{2}$ miles north of; iron post, 12 inches out of ground, at section corner between T. 2 N., R. 7 W., secs. 5 and 4, and T. 3 N., R. 7 W., secs. 32 and 33, and 50 feet west of track	1,331.237
Marlow, $3\frac{3}{4}$ miles south of; iron post, 12 inches out of ground, at section corner between T. 1 N., R. 7 W., secs. 4 and 5, and T. 2 N., R. 7 W., secs. 32 and 33, and 730 feet east of track	1,304.429
Duncan, $\frac{1}{2}$ mile north of; iron post, 8 inches out of ground on Indian base line, at quarter section corner between T. 1 N., R. 7 W., sec. 32, and T. 1 S., R. 7 W., sec. 5, and 1,000 feet west of track	1,127.137

ALONG TOWNSHIP LINES.

Feet.

Chickasaw Nation, closing corner Ts. 5 and 6 N., R. 7 W., on the west boundary of; iron post.....	1,095.828
Corner Ts. 5 and 6 N., Rs. 6 and 7 W., iron post.....	1,162.278
Corner Ts. 5 and 6 N., Rs. 5 and 6 W., iron post.....	1,018.768
Corner Ts. 5 and 6 N., Rs. 4 and 5 W., iron post.....	1,139.281
Corner Ts. 5 and 6 N., Rs. 3 and 4 W., iron post.....	1,010.071
Closing corner T. 4 N., Rs. 3 and 4 W., iron post.....	963.419
Standard corner T. 5 N., Rs. 3 and 4 W., iron post.....	962.969
Closing corner T. 4 N., Rs. 4 and 5 W., iron post.....	994.75
Standard corner T. 5 N., Rs. 4 and 5 W., iron post.....	994.79
Closing corner T. 4 N., Rs. 5 and 6 W., iron post.....	1,093.047
Standard corner T. 5 N., Rs. 5 and 6 W., iron post.....	1,124.228
Closing corner T. 4 N., Rs. 6 and 7 W., iron post.....	1,233.823
Standard corner T. 5 N., Rs. 6 and 7 W., iron post.....	1,280.416
Chickasaw Nation, closing corner Ts. 4 and 5 N., R. 7 W., on the west boundary, iron post.....	1,285.583
Chickasaw Nation, closing corner Ts. 3 and 4 N., R. 7 W., on west boundary, iron post.....	1,389.478
Corner Ts. 3 and 4 N., Rs. 6 and 7 W., iron post.....	1,280.309
Corner Ts. 3 and 4 N., Rs. 5 and 6 W., iron post.....	1,266.048
Corner Ts. 3 and 4 N., Rs. 4 and 5 W., iron post.....	1,078.202
Corner Ts. 3 and 4 N., Rs. 3 and 4 W., iron post.....	1,154.892
Corner Ts. 2 and 3 N., Rs. 3 and 4 W., iron post.....	1,188.532
Corner Ts. 2 and 3 N., Rs. 4 and 5 W., iron post.....	1,158.045
Corner Ts. 2 and 3 N., Rs. 5 and 6 W., iron post.....	1,303.954
Corner Ts. 2 and 3 N., Rs. 6 and 7 W., iron post.....	1,368.898
Chickasaw Nation, closing corner Ts. 2 and 3 N., R. 7 W., on west boundary, iron post.....	1,272.209
Chickasaw Nation, closing corner Ts. 1 and 2 N., R. 8 W., on west boundary, iron post.....	1,207.268
Corner Ts. 1 and 2 N., Rs. 7 and 8 W., iron post.....	1,223.689
Corner Ts. 1 and 2 N., Rs. 6 and 7 W., iron post.....	1,209.996
Corner Ts. 1 and 2 N., Rs. 5 and 6 W., iron post.....	1,152.154
Corner Ts. 1 and 2 N., Rs. 4 and 5 W., iron post.....	1,111.915
Corner Ts. 1 and 2 N., Rs. 3 and 4 W., iron post.....	1,116.062
Closing corner T. 1 S., Rs. 3 and 4 W., iron post.....	1,006.949
Standard corner T. 1 N., Rs. 3 and 4 W., iron post.....	1,016.101
Closing corner T. 1 S., Rs. 4 and 5 W., iron post.....	1,101.581
Standard corner T. 1 N., Rs. 4 and 5 W., iron post.....	1,101.837
Closing corner T. 1 S., Rs. 5 and 6 W., iron post.....	1,105.384
Standard corner T. 1 N., Rs. 5 and 6 W., iron post.....	1,093.664
Standard corner T. 1 N., Rs. 6 and 7 W., iron post.....	1,224.758
Closing corner T. 1 S., Rs. 7 and 8 W., iron post.....	1,119.069
Standard corner T. 1 N., Rs. 7 and 8 W., iron post.....	1,123.645
Closing corner Ts. 1 N. and 1 S., R. 8 W., which is intersection of base line and west boundary Chickasaw Nation; iron post.....	1,123.614

CHICKASHA QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

Mr. R. Coe ran the railroad levels. Mr. E. M. Fry was attached to the subdivision and topographic party of Mr. R. A. Farmer.

FROM MINCO, SOUTH ALONG CHICAGO, ROCK ISLAND AND PACIFIC
RAILWAY, TO CHICKASHA.

	Feet.
Minco, $1\frac{1}{2}$ miles south of; iron post, 12 inches out of ground, at $\frac{1}{4}$ section corner between T. 9 N., R. 7 W., sec. 4, and T. 10 N., R. 7 W., sec. 33, and about 150 feet east of track.....	1, 283. 774
Minco, $7\frac{1}{2}$ miles south of; iron post, 15 inches out of ground, at corner to secs. 32 and 33, of T. 9 N., R. 7 W., on the second standard parallel north, and about 600 feet west of track	1, 201. 295
Chickasha, $4\frac{1}{2}$ miles north of; iron post, 12 inches out of ground, at $\frac{1}{4}$ section corner between T. 7 N., R. 7 W., sec. 4, and T. 8 N., R. 7 W., sec. 33, about 600 feet east of track.....	1, 101. 79
Chickasha; bronze tablet set in middle of east face of foundation stone at northeast corner of brick building owned by J. C. Griggers and situated at the corner of Chickasha avenue and Second street.....	1, 090. 967
Chickasha, $1\frac{3}{4}$ miles south of; iron post, 8 inches out of ground, at $\frac{1}{4}$ section corner between T. 6 N., R. 7 W., sec. 3, and T. 7 N., R. 7 W., sec. 34, about 180 feet west of track	1, 084. 071

ALONG TOWNSHIP AND SECTION LINES.

Chickasaw Nation, closing corner of Ts. 9 and 10 N., R. 7 W., on the west boundary of; iron post.....	1, 287. 534
Corner Ts. 9 and 10 N., Rs. 6 and 7 W., iron post.....	1, 332. 564
Corner Ts. 9 and 10 N., Rs. 5 and 6 W., iron post.....	1, 306. 784
Corner Ts. 9 and 10 N., Rs. 4 and 5 W., iron post.....	1, 282. 664
Canadian River, meander corner on, between T. 9 N., R. 4 W., sec. 1, and T. 10 N., R. 4 W., sec. 36; iron post.....	1, 144. 084
Canadian River, meander corner on, between T. 8 N., R. 3 W., sec. 5, and T. 9 N., R. 3 W., sec. 32; iron post.....	1, 110. 827
Closing corner T. 8 N., Rs. 3 and 4 W., iron post.....	1, 177. 227
Standard corner T. 9 N., Rs. 3 and 4 W., iron post.....	1, 180. 967
Closing corner T. 8 N., Rs. 4 and 5 W., iron post.....	1, 283. 967
Standard corner T. 9 N., Rs. 4 and 5 W., iron post.....	1, 290. 657
Closing corner T. 8 N., Rs. 5 and 6 W., iron post.....	1, 288. 605
Standard corner T. 9 N., Rs. 5 and 6 W., iron post.....	1, 300. 125
Closing corner T. 8 N., Rs. 6 and 7 W., iron post.....	1, 222. 395
Standard corner T. 9 N., Rs. 6 and 7 W., iron post	1, 206. 805
Chickasaw Nation, closing corner Ts. 8 and 9 N., R. 7 W., on the west boundary of; iron post.....	1, 184. 225
Chickasaw Nation, closing corner Ts. 7 and 8 N., R. 7 W., on the west boundary of; iron post.....	1, 165. 22
Corner Ts. 7 and 8 N., Rs. 6 and 7 W., iron post	1, 218. 47
Corner Ts. 7 and 8 N., Rs. 5 and 6 W., iron post.....	1, 213. 46
Corner Ts. 7 and 8 N., Rs. 4 and 5 W., iron post	1, 260. 247
Corner Ts. 7 and 8 N., Rs. 3 and 4 W., iron post.....	1, 111. 047
Corner Ts. 6 and 7 N., Rs. 3 and 4 W., iron post.....	1, 219. 167
Corner Ts. 6 and 7 N., Rs. 4 and 5 W., iron post.....	1, 168. 727
Corner Ts. 6 and 7 N., Rs. 5 and 6 W., iron post.....	1, 152. 061
Corner Ts. 6 and 7 N., Rs. 6 and 7 W., iron post	1, 078. 351
Chickasaw Nation, closing corner Ts. 6 and 7 N., R. 7 W., on the west boundary; iron post	1, 155. 551

PURCELL QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

Railroad levels were run by Mr. R. Coe. Messrs. W. S. D. Moore and E. M. Fry were attached to the subdivision and topographic party of Mr. R. A. Farmer.

ON THE GULF, COLORADO AND SANTA FE RAILWAY.

	Feet.
Purcell; bronze tablet set in middle of south face of second stone from southwest corner in the first course of stone above basement, in building used as U. S. court-house	1, 091. 691
Purcell, $4\frac{3}{8}$ miles north of; on the northeast rivet on bridge plate on east side of south pier of bridge over Canadian River.....	1, 057. 533

ALONG TOWNSHIP AND SECTION LINES.

Corner Ts. 7 and 8 N., Rs. 2 and 3 W., iron post	1, 136. 707
Canadian River, meander corner on, between T. 7 N., R. 2 W., sec. 4, and T. 8 N., R. 2 W., sec. 33; iron post	1, 964. 047
Canadian River, meander corner on, between T. 6 N., R. 2 W., sec. 1, and T. 7 N., R. 2 W., sec. 36; iron post	1, 029. 167
Corner Ts. 6 and 7 N., Rs. 2 and 3 W., iron post	1, 124. 077

SEMINOLE QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

The railroad levels were run by Mr. E. L. Faison. Messrs. W. S. D. Moore, W. R. Manning, and E. L. Faison had independent level parties.

FROM WEWOKA, INDIAN TERRITORY, ALONG CHOCTAW, OKLAHOMA AND GULF RAILROAD, TO SHAWNEE, OKLAHOMA.

	Feet.
Wewoka, 6 miles west of; iron spike in mile pole 93	833. 464
Wewoka, 9 miles west of; iron post 5.7 feet west of mile pole 90	838. 57
Earlsboro, Oklahoma Territory, 6 miles east of; iron spike in mile pole 85	861. 912
Earlsboro; iron post 17 feet west of main track and 200 feet north of station building.....	1, 024. 714
Tecumseh; spike in telegraph pole at junction of the Choctaw, Oklahoma and Gulf Railroad and Tecumseh Railroad	991. 38
Shawnee; iron post 15 feet north of track and at east end of station platform	1, 040. 674
Shawnee, 4 miles west of, near Dale; iron post at mile pole 66.....	1, 018. 126

ALONG TOWNSHIP LINES.

Creek-Oklahoma boundary, closing corner Ts. 11 and 12 N., R. 6 E., iron post	979. 38
Corner Ts. 11 and 12 N., Rs. 6 and 7 E., iron post	921. 773
Corner Ts. 11 and 12 N., Rs. 7 and 8 E., iron post	937. 515
Corner Ts. 10 and 11 N., Rs. 7 and 8 E., iron post	989. 174
Corner Ts. 10 and 11 N., Rs. 6 and 7 E., iron post	901. 875
Corner Ts. 10 and 11 N., Rs. 5 and 6 E., iron post	989. 61
Seminole-Oklahoma boundary line, closing corner Ts. 10 and 11 N., R. 5 E., iron post	946. 122
Seminole-Oklahoma boundary, closing corner Ts. 9 and 10 N., R. 5 E., iron post.....	993. 871

	Feet.
Corner Ts. 9 and 10 N., Rs. 5 and 6 E., iron post	1,017.957
Corner Ts. 9 and 10 N., Rs. 6 and 7 E., iron post	995.929
Corner Ts. 9 and 10 N., Rs. 7 and 8 E., iron post	990.638
Standard corner T. 9 N., Rs. 7 and 8 E., iron post	818.167
Standard corner T. 9 N., Rs. 6 and 7 E., iron post	853.218
Closing corner T. 8 N., Rs. 6 and 7 E., iron post	863.918
Standard corner T. 9 N., Rs. 5 and 6 E., iron post	844.141
Closing corner T. 8 N., Rs. 5 and 6 E., iron post	915.692
Seminole-Oklahoma boundary, closing corner Ts. 8 and 9 N., R. 5 E., iron post	930.24
Seminole-Oklahoma boundary, closing corner Ts. 7 and 8 N., R. 5 E., iron post	890.788
Corner Ts. 7 and 8 N., Rs. 5 and 6 E., iron post	901.809
Corner Ts. 7 and 8 N., Rs. 6 and 7 E., iron post	832.761
Corner Ts. 7 and 8 N., Rs. 7 and 8 E., iron post	956.785
Corner Ts. 6 and 7 N., Rs. 7 and 8 E., iron post	884.63
Corner Ts. 6 and 7 N., Rs. 6 and 7 E., iron post	848.919
Corner Ts. 6 and 7 N., Rs. 5 and 6 E., iron post	949.752
Seminole-Oklahoma boundary, closing corner Ts. 5 and 6 N., R. 5 E., iron post	910.974

SAC AND FOX QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

The level work of this quadrangle was done by two independent level parties, under Messrs. W. R. Manning and E. L. Faison, levelmen.

ALONG TOWNSHIP LINES.

	Feet.
Creek-Oklahoma boundary, closing corner Ts. 17 and 18 N., R. 6 E., iron post	829.713
Corner Ts. 17 and 18 N., Rs. 6 and 7 E., bronze tablet set into sandstone post, 48 by 8 by 6 inches, 45 inches in the ground	839.555
Corner Ts. 17 and 18 N., Rs. 7 and 8 E., iron post	920.835
Standard corner T. 17 N., Rs. 7 and 8 E., iron post	948.707
Closing corner T. 16 N., Rs. 7 and 8 E., iron post	956.193
Closing corner T. 16 N., Rs. 6 and 7 E., iron post	962.232
Creek-Oklahoma boundary, standard corner T. 17 N., Rs. 6 and 7 E. (which is also closing Ts. 16 and 17 N., R. 6), iron post	976.695
Creek-Oklahoma boundary, closing corner Ts. 15 and 16 N., R. 6 E., iron post	834.802
Corner Ts. 15 and 16 N., Rs. 6 and 7 E., iron post	844.058
Corner Ts. 15 and 16 N., Rs. 7 and 8 E., iron post	814.55
Corner Ts. 14 and 15 N., Rs. 7 and 8 E., iron post	765.315
Corner Ts. 14 and 15 N., Rs. 6 and 7 E., iron post	877.9
Creek-Oklahoma boundary, closing corner Ts. 14 and 15 N., R. 6 E., iron post	860.416
Creek-Oklahoma boundary, closing corner Ts. 13 and 14 N., R. 6 E., iron post	787.97
Corner Ts. 13 and 14 N., Rs. 6 and 7 E., iron post	783.811
Corner Ts. 13 and 14 N., Rs. 7 and 8 E., iron post	773.444
Standard corner T. 13 N., Rs. 7 and 8 E., iron post	861.855
Standard corner T. 13 N., Rs. 6 and 7 E., iron post	867.882
Creek-Oklahoma boundary, closing corner Ts. 12 and 13 N., R. 6 E.	866.51

PAWNEE QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

This bench mark was established by Mr. W. R. Manning on a double-rodged line.

	Feet.
Corner secs. 13 and 24, T. 18 N., R. 6 E., and secs. 18 and 19, T. 18 N., R. 7 E.; a sandstone post, 35 by 6 by 6 inches, with bronze tablet inserted	777.287

HOMINY QUADRANGLE (INDIAN TERRITORY-OKLAHOMA).

Mr. C. B. Odell ran the levels along the railroad, and he also had charge of an independent level party on township lines.

ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD FROM
RED FORK TO SAPULPA.

	Feet.
Red Fork, 3 miles south of; square hole cut in capstone of south pier of bridge over Nickle Creek	728.201
Sapulpa, bronze tablet set into wall of Gladstone Hotel, 14 feet from east end and 3.5 feet above porch	722.862
Sapulpa, copper bolt in sandstone post, 9 by 9 by 20 inches, buried flush with surface of ground, 11.5 feet from northwest corner of station	718.491

ALONG TOWNSHIP LINES.

Creek-Oklahoma boundary, closing corner of T. 19 N., Rs. 11 and 12 E., iron post	737.081
Corner Ts. 18 and 19 N., Rs. 11 and 12 E., iron post	746.531

ADDINGTON QUADRANGLE.

The railroad levels were run by Mr. R. Coe. Mr. Coe also had an independent party to run levels on the first standard parallel south. Messrs. J. P. Walker and H. L. Baker were attached to the subdivision and topographic party of Mr. A. D. Morton, while Messrs. R. T. Carnall and R. Coe were with Mr. J. Ahern's party and Mr. E. M. Fry with Mr. R. A. Farmer's party.

FROM COMANCHE, SOUTH ALONG THE CHICAGO, ROCK ISLAND
AND PACIFIC RAILWAY, TO RYAN.

	Feet.
Comanche, 4 miles north of; a railroad spike in telegraph mile pole 481..	1,024.795
Comanche, iron post 5 inches out of ground and on the south side of the station building; the post is set between the platform and a telegraph pole	979.723
Comanche, 2 miles south of; a railroad spike in telegraph mile pole 487..	958.439
Addington, a square hole cut in the northwest corner of top stone of north foundation and in second tier from front of the water tank at	917.67
Addington, 4½ miles south of; square hole cut in copingstone on west end of south pier of bridge 3202 over Cow Creek, and about 1,100 feet north of mile pole 499	883.264
Sugden, ½ mile south of; an iron post at the standard corner of T. 5 S., Rs. 7 and 8 W., and about 1,600 feet west of the point of intersection of the railroad with the first standard parallel south	843.965
Ryan, 1 mile north of; on outside anchor bolt on west side of south pier of bridge 3212 over Beaver Creek	827.204

ALONG TOWNSHIP LINES.

	Feet.
Chickasaw Nation, closing corner fractional Ts. 1 and 2 S., R. 8 W., on west boundary, iron post	1,095.955
Corner Ts. 1 and 2 S., Rs. 7 and 8 W., iron post	1,123.275
Corner Ts. 1 and 2 S., Rs. 6 and 7 W., iron post	1,127.5
Corner Ts. 1 and 2 S., Rs. 5 and 6 W., iron post	1,081.88
Corner Ts. 1 and 2 S., Rs. 4 and 5 W., iron post	1,218.23
Corner Ts. 1 and 2 S., Rs. 3 and 4 W., iron post	1,084.679
Corner Ts. 2 and 3 S., Rs. 3 and 4 W., iron post	1,056.232
Corner Ts. 2 and 3 S., Rs. 4 and 5 W., iron post	967.009
Corner Ts. 2 and 3 S., Rs. 5 and 6 W., iron post	931.539
Corner Ts. 2 and 3 S., Rs. 6 and 7 W., iron post	987.769
Corner Ts. 2 and 3 S., Rs. 7 and 8 W., iron post	1,062.269
Chickasaw Nation, closing corner fractional Ts. 2 and 3 S., R. 8 W., on the west boundary of the, iron post	1,005.399
Chickasaw Nation, closing corner fractional Ts. 3 and 4 S., R. 8 W., on the west boundary of the, iron post	970.15
Corner Ts. 3 and 4 S., Rs. 7 and 8 W., iron post	908.29
Corner Ts. 3 and 4 S., Rs. 6 and 7 W., iron post	969.22
Corner Ts. 3 and 4 S., Rs. 5 and 6 W., iron post	856.87
Corner Ts. 3 and 4 S., Rs. 4 and 5 W., iron post	974.97
Corner Ts. 3 and 4 S., Rs. 3 and 4 W., iron post	1,038.289
Corner Ts. 4 and 5 S., Rs. 3 and 4 W., iron post	848.247
Corner Ts. 4 and 5 S., Rs. 4 and 5 W., iron post	820.107
Corner Ts. 4 and 5 S., Rs. 5 and 6 W., iron post	899.977
Corner Ts. 4 and 5 S., Rs. 6 and 7 W., iron post	894.199
Corner Ts. 4 and 5 S., Rs. 7 and 8 W., iron post	945.446
Standard corner T. 5 S., Rs. 6 and 7 W., iron post	913.225
Standard corner T. 5 S., Rs. 5 and 6 W., iron post	846.21
Standard corner T. 5 S., Rs. 4 and 5 W., iron post	797.39
Closing corner T. 6 S., Rs. 4 and 5 W., iron post	785.24
Standard corner T. 5 S., Rs. 3 and 4 W., iron post	847.62
Closing corner T. 6 S., Rs. 3 and 4 W., iron post	809.475
Chickasaw Nation, closing corner of fractional Ts. 4 and 5 S., R. 8 W., on the west boundary of, iron post	871.686
Chickasaw Nation, closing corner of the First Standard Parallel South, on the west boundary of the, and is in R. 8 W. of the Chickasaw Survey, iron post	904.44

ARDMORE QUADRANGLE.

The railroad levels were run by Mr. A. F. Hassan and Mr. R. Coe. Messrs. J. H. Carlock and H. L. Baker were attached to the subdivision and topographic party of Mr. C. W. Goodlove, while Mr. E. M. Fry was with Mr. R. A. Farmer's party and Mr. R. T. Carnall with Mr. J. Ahern's party. Mr. R. Coe had charge of an independent level party.

FROM OVERBROOK, NORTH ALONG GULF, COLORADO AND SANTA FE RAILWAY, TO DOUGHERTY.

	Feet.
Overbrook, $4\frac{1}{2}$ miles south of; cross mark cut 8 inches from west edge of west coping of north pier of bridge 338, over Little Hickory Creek	667.978
Overbrook, $\frac{1}{2}$ mile northwest of; iron post at standard corner T. 5 S., Rs. 1 and 2 E., and 1,300 feet west of railway	766.055

	Page.
Overbrook, railroad spike in telegraph mile pole 443, near station	735. 216
Ardmore, 1 mile south of; iron post at intersection of railway with township line, between Ts. 4 and 5 S., R. 2 E., near mile pole 449, and 30 feet west of center of track	861. 795
Ardmore; bronze tablet in sandstone foundation of Noble Bros.' hardware store at southeast angle of railway crossing on Main street	872. 443
Ardmore, 6 miles north of; iron post at intersection of railway with township line between Ts. 3 and 4 S., R. 2 E., in line with telegraph poles and 50 feet south of second pole west of track	708. 829
Berwyn, 3 miles north of; copper bolt set in east side of coping stone of north pier of bridge No. 402, over Cool Creek, and near mile pole 464..	752. 335
Dougherty, 3,000 feet south of; railroad spike in mile pole 469	765. 303
Dougherty, 2 miles north of; iron post at intersection of railway with township line between Ts. 1 and 2 S., R. 2 E., 30 feet left of track and 6 feet south of telegraph pole, 300 feet south of bridge 417, which is 3,000 feet south of mile pole 472	761. 509

ALONG TOWNSHIP LINES.

Corner Ts. 1 and 2 S., Rs. 2 and 3 W., iron post	1, 047. 699
Corner Ts. 1 and 2 S., Rs. 1 and 2 W., iron post	1, 171. 609
Corner Ts. 1 and 2 S., Rs. 1 E. and 1 W., iron post	1, 304. 219
Corner Ts. 1 and 2 S., Rs. 1 and 2 E., iron post	1, 090. 649
Corner Ts. 1 and 2 S., Rs. 2 and 3 E., iron post	786. 619
Corner Ts. 2 and 3 S., Rs. 2 and 3 E., iron post	808. 912
Corner Ts. 2 and 3 S., Rs. 1 and 2 E., iron post	909. 552
Corner Ts. 2 and 3 S., Rs. 1 E. and 1 W., iron post	912. 862
Corner Ts. 2 and 3 S., Rs. 1 and 2 W., iron post	884. 142
Corner Ts. 2 and 3 S., Rs. 2 and 3 W., iron post	1, 034. 087
Corner Ts. 3 and 4 S., Rs. 2 and 3 W., iron post	878. 159
Corner Ts. 3 and 4 S., Rs. 1 and 2 W., iron post	927. 469
Corner Ts. 3 and 4 S., Rs. 1 E. and 1 W., iron post	868. 809
Corner Ts. 3 and 4 S., Rs. 1 and 2 E., iron post	748. 669
Witness corner Ts. 3 and 4 S., Rs. 2 and 3 E., iron post	718. 159
Corner Ts. 4 and 5 S., Rs. 2 and 3 E., iron post	890. 745
Corner Ts. 4 and 5 S., Rs. 1 and 2 E., iron post	858. 695
Corner Ts. 4 and 5 S., Rs. 1 E. and 1 W., iron post	950. 605
Corner Ts. 4 and 5 S., Rs. 1 and 2 W., iron post	857. 192
Corner Ts. 4 and 5 S., Rs. 2 and 3 W., iron post	991. 032
Standard corner T. 5 S., Rs. 2 and 3 W., iron post	927. 865
Closing corner T. 6 S., Rs. 2 and 3 W., iron post	930. 73
Standard corner T. 5 S., Rs. 1 and 2 W., iron post	889. 575
Closing corner T. 6 S., Rs. 1 and 2 W., iron post	902. 27
Indian meridian, intersection of first standard parallel south with; iron post, Ts. 5 and 6 S., Rs. 1 E. and 1 W	818. 369
Standard corner T. 5 S., Rs. 2 and 3 E., iron post	817. 911

TISHOMINGO QUADRANGLE.

Mr. W. R. Manning had charge of an independent level party. Mr. H. L. Muldrow, jr., was attached to the subdivision and topographic party of Mr. R. H. McKee, and Mr. J. H. Carlock to that of Mr. C. W. Goodlove.

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 1 and 2 S., Rs. 3 and 4 E., iron post.....	1, 052. 289
Corner Ts. 1 and 2 S., Rs. 4 and 5 E., iron post.....	1, 035. 779
Corner Ts. 1 and 2 S., Rs. 5 and 6 E., iron post.....	1, 036. 039
Corner Ts. 1 and 2 S., Rs. 6 and 7 E., iron post.....	967. 079
Corner Ts. 1 and 2 S., Rs. 7 and 8 E., iron post.....	738. 843
Corner Ts. 2 and 3 S., Rs. 7 and 8 E., iron post.....	782. 572
Corner Ts. 2 and 3 S., Rs. 6 and 7 E., iron post.....	845. 012
Corner Ts. 2 and 3 S., Rs. 5 and 6 E., iron post.....	891. 322
Corner Ts. 2 and 3 S., Rs. 4 and 5 E.; bronze tablet set into township corner stone, which stone is a stone in place.....	903. 212
Corner Ts. 2 and 3 S., Rs. 3 and 4 E., iron post.....	858. 382
Corner Ts. 3 and 4 S., Rs. 3 and 4 E., iron post.....	779. 049
Corner Ts. 3 and 4 S., Rs. 4 and 5 E., iron post.....	809. 549
Corner Ts. 3 and 4 S., Rs. 5 and 6 E., iron post.....	694. 599
Corner Ts. 3 and 4 S., Rs. 6 and 7 E., iron post.....	718. 139
Corner Ts. 3 and 4 S., Rs. 7 and 8 E., iron post.....	726. 319
Corner Ts. 4 and 5 S., Rs. 7 and 8 E., iron post.....	736. 445
Corner Ts. 4 and 5 S., Rs. 6 and 7 E., iron post.....	598. 755
Corner Ts. 4 and 5 S., Rs. 5 and 6 E., iron post.....	785. 525
Corner Ts. 4 and 5 S., Rs. 4 and 5 E., iron post.....	793. 075
Corner Ts. 4 and 5 S., Rs. 3 and 4 E., iron post.....	858. 075
Standard corner T. 5 S., Rs. 3 and 4 E., iron post.....	730. 03
Closing corner T. 6 S., Rs. 4 and 5 E., iron post.....	871. 866
Standard corner T. 5 S., Rs. 4 and 5 E., iron post.....	860. 106
Standard corner T. 5 S., Rs. 5 and 6 E., iron post.....	687. 477
Standard corner T. 5 S., Rs. 6 and 7 E., iron post.....	754. 815
Standard corner T. 5 S., Rs. 7 and 8 E., iron post.....	657. 441

ATOKA QUADRANGLE.

The railroad levels were run by Messrs. G. A. Purington and W. R. Manning. Messrs. R. Coe and W. R. Manning were in charge of independent level parties. Mr. H. L. Muldrow, jr., was attached to the subdivision and topographic party of Mr. R. H. McKee.

FROM STRINGTOWN, ALONG THE MISSOURI, KANSAS AND TEXAS
RAILWAY, TO ARMSTRONG.

	Feet.
Stringtown, $\frac{1}{2}$ mile south of; elm, 10 inches in diameter, 100 feet left of track and 1,000 feet south of mile pole 603.....	594. 604
Atoka, $\frac{1}{4}$ mile north of; copper bolt sunk into second coping stone from east side of north pier of bridge 367, over Muddy Boggy Creek.....	540. 375
Peck; nail in black-jack oak, 14 inches diameter, 40 feet left of track and 350 feet south of mile pole 615.....	616. 096
Caney, $\frac{1}{2}$ mile north of; copper bolt sunk into first step of west side of south abutment of bridge 388, 500 feet south of mile pole 621.....	517. 217
Caddo, 2 miles north of; copper bolt sunk into second coping stone from east side of south abutment of bridge 403, 1,800 feet north of mile pole 627.....	591. 561
Armstrong; copper bolt sunk into first coping stone from north edge of north abutment of bridge 421, over Blue River, 600 feet north of the Armstrong switch	567. 491

ON COALGATE BRANCH OF THE MISSOURI, KANSAS AND TEXAS RAILWAY.

	Feet.
Midway; spike in mile pole 5.....	598. 213
Lehigh; bronze tablet set into stone of first layer of foundation near north-east corner of building owned by Joe. Grillery, and situated at the southwest corner of Main street and "Wild-Cat Row.".....	593. 319

ALONG TOWNSHIP LINES.

Chickasaw-Choctaw boundary line, closing corner of Ts. 1 and 2 S., R. 8 E., of the Chickasaw survey on the, iron post.....	666. 993
Chickasaw-Choctaw boundary line, closing corner of Ts. 1 and 2 S., R. 8 E., of the Choctaw survey on the, iron post.....	666. 583
Corner Ts. 1 and 2 S., Rs. 8 and 9 E., iron post.....	619. 730
Corner Ts. 1 and 2 S., Rs. 9 and 10 E., iron post.....	595. 571
Corner Ts. 1 and 2 S., Rs. 10 and 11 E., iron post.....	591. 614
Corner Ts. 1 and 2 S., Rs. 11 and 12 E., iron post.....	597. 76
Corner Ts. 2 and 3 S., Rs. 11 and 12 E., iron post.....	598. 236
Corner Ts. 2 and 3 S., Rs. 10 and 11 E., iron post.....	633. 062
Corner Ts. 2 and 3 S., Rs. 9 and 10 E., iron post.....	533. 652
Corner Ts. 2 and 3 S., Rs. 8 and 9 E., iron post.....	635. 382
Chickasaw-Choctaw boundary line, closing corner of Ts. 2 and 3 S., R. 8 E., of the Choctaw Survey on the, iron post.....	706. 202
Chickasaw-Choctaw boundary line, closing corner of Ts. 2 and 3 S., R. 8 E., of the Chickasaw Survey on the, iron post.....	764. 102
Chickasaw-Choctaw boundary line, closing corner of Ts. 3 and 4 S., R. 8 E., of the Chickasaw Survey on the, iron post.....	653. 499
Chickasaw-Choctaw boundary line, closing corner of Ts. 3 and 4 S., R. 8 E., of the Choctaw Survey on the, iron post.....	651. 659
Corner Ts. 3 and 4 S., Rs. 8 and 9 E., iron post.....	718. 542
Corner Ts. 3 and 4 S., Rs. 9 and 10 E., iron post.....	688. 987
Corner Ts. 3 and 4 S., Rs. 10 and 11 E., iron post.....	502. 994
Corner Ts. 3 and 4 S., Rs. 11 and 12 E., iron post.....	557. 629
Standard corner T. 4 S., Rs. 11 and 12 E., iron post.....	522. 542
Closing corner T. 5 S., Rs. 11 and 12 E., iron post.....	502. 902
Standard corner T. 4 S., Rs. 10 and 11 E., iron post.....	642. 252
Closing corner T. 5 S., Rs. 10 and 11 E., iron post.....	648. 057
Standard corner T. 4 S., Rs. 9 and 10 E., iron post.....	632. 257
Closing corner T. 5 S., Rs. 9 and 10 E., iron post.....	630. 217
Standard corner Ts. 4 and 5 S., Rs. 8 and 9 E., intersection of 1st standard parallel south with the 2d guide meridian east; iron post.....	600. 287
Chickasaw-Choctaw boundary line, closing corner Ts. 4 and 5 S., R. 8 E., of the Choctaw Survey on the, iron post.....	668. 287
Chickasaw-Choctaw boundary line, closing corner Ts. 4 and 5 S., R. 8 E., of the Chickasaw Survey on the, iron post.....	669. 107
Chickasaw-Choctaw boundary line, closing corner Ts. 5 and 6 S., R. 8 E., of the Chickasaw and Choctaw Surveys on the, iron post.....	708. 947
Corner Ts. 5 and 6 S., Rs. 8 and 9 E., iron post.....	632. 16
Corner Ts. 5 and 6 S., Rs. 9 and 10 E., iron post.....	634. 25
Corner Ts. 5 and 6 S., Rs. 10 and 11 E., iron post.....	604. 015
Corner Ts. 5 and 6 S., Rs. 11 and 12 E., iron post.....	714. 355

ANTLERS QUADRANGLE.

Mr. H. C. McCluer ran the railroad levels. Messrs. Robert Coe, R. T. Carnall, and F. E. Fellows had independent level parties, while Mr. W. P. Halliday was attached to the topographic and subdivision party of Mr. W. S. Post.

ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD FROM
BUTLER TO GOODLAND.

	Feet.
Butler; elm, 14 inches diameter, 140 feet left of track and 400 feet south of mile pole 522	528.466
Wadena, $\frac{1}{3}$ mile north of; square hole cut into west end of south abutment of bridge	491.285
Wadena; elm, 10 inches diameter, 90 feet left of track and 200 feet south of milepost 527	485.725
Kosoma, $\frac{1}{3}$ mile south of; post oak, 12 inches diameter, 60 feet right of track and 1,700 feet south of mile pole 531	483.196
Rodney; post oak, 10 inches diameter, 90 feet left and 600 feet south of mile pole 537	468.436
Davenport, $\frac{1}{3}$ mile south of; red oak, 15 inches in diameter, 100 feet left of track and opposite mile pole 539	474.286
Antlers; square hole cut into section corner stone, common to secs. 3, 4, 9, and 10, T. 4 S., R. 16 E.; 28 feet north of the northwest corner of the Antlers court-house building	508.856
Antlers, 4 miles south of; black-jack, 8 inches diameter, 100 feet right of track and 175 feet south of mile pole 546	558.753
Hamden; red oak, 24 inches diameter, 60 feet right of track and 50 feet east of mile pole 549	464.561
Goodland, 2 miles north of; red oak, 20 inches diameter, 60 feet right of track and 275 feet south of mile pole 554	494.116
Goodland, 1,000 feet north of station; elm tree, 6 inches in diameter, 60 feet right of track and 120 feet north of mile pole 556	491.969

ALONG TOWNSHIP LINES.

Corner Ts. 1 and 2 S., Rs. 12 and 13 E., iron post	724.63
Corner Ts. 1 and 2 S., Rs. 13 and 14 E., iron post	842.345
Corner Ts. 1 and 2 S., Rs. 14 and 15 E., iron post	943.7
Corner Ts. 1 and 2 S., Rs. 15 and 16 E., bronze tablet set into township corner stone, which is a "stone in place"	697.505
Corner Ts. 1 and 2 S., Rs. 16 and 17 E., iron post	665.505
Corner Ts. 2 and 3 S., Rs. 16 and 17 E., iron post	618.038
Corner Ts. 2 and 3 S., Rs. 15 and 16 E., iron post	812.5
Corner Ts. 2 and 3 S., Rs. 14 and 15 E., iron post	663.111
Corner Ts. 2 and 3 S., Rs. 13 and 14 E., iron post	580.896
Corner Ts. 2 and 3 S., Rs. 12 and 13 E., iron post	605.221
Corner Ts. 3 and 4 S., Rs. 12 and 13 E., iron post	568.509
Corner Ts. 3 and 4 S., Rs. 13 and 14 E., iron post	497.184
Corner Ts. 3 and 4 S., Rs. 14 and 15 E., iron post	622.234
Corner Ts. 3 and 4 S., Rs. 15 and 16 E., iron post	565.504
Corner Ts. 3 and 4 S., Rs. 16 and 17 E., iron post	453.518
Standard corner T. 4 S., Rs. 16 and 17 E., iron post	468.94

	Feet.
Closing corner T. 5 S., Rs. 16 and 17 E., iron post	503.77
Standard corner T. 4 S., Rs. 15 and 16 E., iron post	629.9
Closing corner T. 5 S., Rs. 15 and 16 E., iron post	620.755
Standard corner T. 4 S., Rs. 14 and 15 E., iron post	574.565
Closing corner T. 5 S., Rs. 14 and 15 E., iron post	531.42
Standard corner T. 4 S., Rs. 13 and 14 E., iron post	544.27
Closing corner T. 5 S., Rs. 13 and 14 E., iron post	531.81
Standard corner T. 4 S., Rs. 12 and 13 E., iron post	465.49
Closing corner T. 5 S., Rs. 12 and 13 E., iron post	465.755
Corner Ts. 5 and 6 S., Rs. 12 and 13 E., iron post	729.39
Corner Ts. 5 and 6 S., Rs. 13 and 14 E., iron post	523.99
Corner Ts. 5 and 6 S., Rs. 14 and 15 E., iron post	481.75
Corner Ts. 5 and 6 S., Rs. 15 and 16 E., iron post	516.25
Corner Ts. 5 and 6 S., Rs. 16 and 17 E., iron post	532.27

ALIKCHI QUADRANGLE.

Messrs. F. E. Fellows and V. T. Rhyne had charge of independent level parties. Messrs. F. E. Fellows and W. P. Halliday were attached for a time to the topographic and subdivision party of Mr. Oscar Jones, after which time Messrs. W. P. Halliday, Oscar Jones, and G. H. Bartlett were attached to the party under charge of Mr. W. S. Post.

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 1 and 2 S., Rs. 17 and 18 E., iron post	567.905
Corner Ts. 1 and 2 S., Rs. 18 and 19 E., iron post	1,039.672
Corner Ts. 1 and 2 S., Rs. 19 and 20 E., iron post	813.882
Corner Ts. 1 and 2 S., Rs. 20 and 21 E., iron post	746.935
Corner Ts. 1 and 2 S., Rs. 21 and 22 E., iron post	947.3
Corner Ts. 2 and 3 S., Rs. 21 and 22 E., iron post	1,253.769
Corner Ts. 2 and 3 S., Rs. 20 and 21 E., iron post	592.811
Corner Ts. 2 and 3 S., Rs. 19 and 20 E., iron post	701.59
Corner Ts. 2 and 3 S., Rs. 18 and 19 E., iron post	973.502
Corner Ts. 2 and 3 S., Rs. 17 and 18 E., iron post	504.559
Corner Ts. 3 and 4 S., Rs. 17 and 18 E., iron post	692.986
Corner Ts. 3 and 4 S., Rs. 18 and 19 E., iron post	609.242
Corner Ts. 3 and 4 S., Rs. 19 and 20 E., iron post	845.637
Corner Ts. 3 and 4 S., Rs. 20 and 21 E., iron post	529.173
Corner Ts. 3 and 4 S., Rs. 21 and 22 E., iron post	700.452
Standard corner T. 4 S., Rs. 21 and 22 E., iron post	560.001
Closing corner T. 5 S., Rs. 21 and 22 E., iron post	527.005
Standard corner T. 4 S., Rs. 20 and 21 E., iron post	533.719
Closing corner T. 5 S., Rs. 20 and 21 E., iron post	546.338
Standard corner T. 4 S., Rs. 19 and 20 E., iron post	693.813
Closing corner T. 5 S., Rs. 19 and 20 E., iron post	681.673
Standard corner T. 4 S., Rs. 18 and 19 E., iron post	459.434
Closing corner T. 5 S., Rs. 18 and 19 E., iron post	466.257
Standard corner T. 4 S., Rs. 17 and 18 E., iron post	412.346
Closing corner T. 5 S., Rs. 17 and 18 E., iron post	414.285
Corner Ts. 5 and 6 S., Rs. 17 and 18 E., iron post	411.973
Corner Ts. 5 and 6 S., Rs. 18 and 19 E., iron post	434.619
Corner Ts. 5 and 6 S., Rs. 19 and 20 E., iron post	433.384
Corner Ts. 5 and 6 S., Rs. 20 and 21 E., iron post	606.513
Corner Ts. 5 and 6 S., Rs. 21 and 22 E., iron post	390.505

EAGLETOWN QUADRANGLE.

Mr. F. E. Fellows had charge of an independent level party. Messrs. W. P. Halliday, Oscar Jones, and G. H. Bartlett were attached to the topographic and subdivision party of Mr. W. S. Post.

ALONG TOWNSHIP LINES.

	Feet.
Corner Ts. 1 and 2 S., Rs. 22 and 23 E., iron post.....	779.16
Corner Ts. 1 and 2 S., Rs. 23 and 24 E., iron post.....	1,090.1
Corner Ts. 1 and 2 S., Rs. 24 and 25 E., iron post.....	960.52
Corner Ts. 1 and 2 S., Rs. 25 and 26 E., iron post.....	758.12
Corner Ts. 1 and 2 S., Rs. 26 and 27 E., iron post.....	1,020.309
Corner Ts. 2 and 3 S., Rs. 26 and 27 E., iron post.....	1,171.796
Corner Ts. 2 and 3 S., Rs. 25 and 26 E., iron post.....	1,045.613
Corner Ts. 2 and 3 S., Rs. 24 and 25 E., iron post.....	889.602
Corner Ts. 2 and 3 S., Rs. 23 and 24 E., iron post.....	944.902
Corner Ts. 2 and 3 S., Rs. 22 and 23 E., iron post.....	739.749
Corner Ts. 3 and 4 S., Rs. 22 and 23 E., iron post.....	743.173
Corner Ts. 3 and 4 S., Rs. 23 and 24 E., iron post.....	818.562
Corner Ts. 3 and 4 S., Rs. 24 and 25 E., iron post.....	685.697
Corner Ts. 3 and 4 S., Rs. 25 and 26 E., iron post.....	629.396
Corner Ts. 3 and 4 S., Rs. 26 and 27 E., iron post.....	1,086.588
Standard corner T. 4 S., Rs. 26 and 27 E., iron post.....	806.891
Closing corner T. 5 S., Rs. 26 and 27 E., iron post.....	827.648
Standard corner T. 4 S., Rs. 25 and 26 E., iron post.....	644.931
Closing corner T. 5 S., Rs. 25 and 26 E., iron post.....	590.208
Standard corner T. 4 S., Rs. 24 and 25 E., iron post.....	757.441
Closing corner T. 5 S., Rs. 24 and 25 E., iron post.....	681.951
Standard corner T. 4 S., Rs. 23 and 24 E., iron post.....	751.146
Closing corner T. 5 S., Rs. 23 and 24 E., iron post.....	738.316
Standard corner T. 4 S., Rs. 22 and 23 E., iron post.....	641.631
Closing corner T. 5 S., Rs. 22 and 23 E., iron post.....	749.346
Corner Ts. 5 and 6 S., Rs. 22 and 23 E., iron post.....	459.675
Corner Ts. 5 and 6 S., Rs. 23 and 24 E., iron post.....	492.322
Corner Ts. 5 and 6 S., Rs. 24 and 25 E., iron post.....	469.285
Corner Ts. 5 and 6 S., Rs. 25 and 26 E., iron post.....	449.933
Corner Ts. 5 and 6 S., Rs. 26 and 27 E., iron post.....	485.451

The following bench mark is situated just east of the Eagletown quadrangle:

	Feet.
Arkansas-Choctaw boundary line closing corner, first standard parallel south, between Ts. 4 and 5 S., R. 27 E., on the cross on stone corner....	733.421

SHAWNEETOWN QUADRANGLE (INDIAN TERRITORY-TEXAS).

Levels were run by G. H. Bartlett, W. P. Halliday, F. E. Fellows, and O. Jones, who were attached to the subdivision and topographic party of Mr. W. S. Post, who was relieved by Mr. W. T. Turner.

ALONG TOWNSHIP AND SECTION LINES.

	Feet.
Corner Ts. 6 and 7 S., Rs. 22 and 23 E., iron post.....	401.319
Corner Ts. 6 and 7 S., Rs. 23 and 24 E., iron post.....	396.409
Corner Ts. 6 and 7 S., Rs. 24 and 25 E., iron post.....	358.914
Corner Ts. 6 and 7 S., Rs. 25 and 26 E., iron post.....	388.382

	Feet.
Corner Ts. 6 and 7 S., Rs. 26 and 27 E., iron post.....	328. 008
Corner Ts. 7 and 8 S., Rs. 26 and 27 E., iron post.....	396. 312
Corner Ts. 7 and 8 S., Rs. 25 and 26 E., iron post.....	342. 216
Corner Ts. 7 and 8 S., Rs. 24 and 25 E., iron post.....	445. 319
Corner Ts. 7 and 8 S., Rs. 23 and 24 E., iron post.....	503. 722
Corner Ts. 7 and 8 S., Rs. 22 and 23 E., iron post.....	417. 355
Red River, meander corner T. 8 S., Rs. 22 and 23 E., secs. 19 and 24, left bank of; mulberry 12 inches in diameter, which is northeast, bearing tree to meander corner	364. 527
Closing corner T. 9 S., Rs. 23 and 24 E., iron post	356. 274
Standard corner T. 8 S., Rs. 23 and 24 E., iron post.....	351. 224
Closing corner T. 9 S., Rs. 24 and 25 E., iron post.....	409. 992
Standard corner T. 8 S., Rs. 24 and 25 E., iron post.....	382. 407
Closing corner T. 9 S., Rs. 25 and 26 E., iron post.....	411. 275
Standard corner T. 8 S., Rs. 25 and 26 E., iron post.....	420. 808
Closing corner T. 9 S., Rs. 26 and 27 E., iron post.....	400. 427
Standard corner T. 8 S., Rs. 26 and 27 E., iron post.....	400. 257
Corner Ts. 9 and 10 S., Rs. 26 and 27 E., iron post.....	352. 027
Corner Ts. 9 and 10 S., Rs. 25 and 26 E., iron post.....	333. 172
Witness corner Ts. 9 and 10 S., Rs. 24 and 25 E., iron post.....	337. 089
Red River, Harris Ferry; 850 feet south of, witness corner to Ts. 9 and 10 S., Rs. 24 and 25 E., on root of bois d'arc tree 16 inches in diameter, left bank of.....	341. 933
Red River, meander corner, T. 9 S., Rs. 23 and 24 E., secs. 25 and 30, left bank of; iron post.....	350. 129

The following bench marks are just east of the Shawneetown quad-
rangle:

	Feet.
Arkansas-Choctaw boundary, closing corner, Ts. 7 and 8 S., R. 27 E., on the; iron post.....	400. 48
Arkansas-Choctaw boundary, closing corner, second standard parallel south, between Ts. 8 and 9 S., R. 27 E., on the, nail in root of bearing tree	393. 655

CLARKSVILLE QUADRANGLE (INDIAN TERRITORY-TEXAS.)

Mr. H. C. McCluer ran the railroad levels. Mr. J. H. Carlock had
an independent level party. Messrs. W. P. Halliday and O. Jones
were attached to the subdivision and topographic party of Mr. W. S.
Post.

ON THE ST. LOUIS AND SAN FRANCISCO RAILROAD.

	Feet.
Arthur, Texas, $\frac{1}{2}$ mile north of; copper bolt set into east coping stone of north abutment of bridge 440	419. 993

ALONG TOWNSHIP AND SECTION LINES.

Corner Ts. 6 and 7 S., Rs. 17 and 18 E., iron post.....	513. 862
Corner Ts. 6 and 7 S., Rs. 18 and 19 E., iron post.....	389. 569
Corner Ts. 6 and 7 S., Rs. 19 and 20 E., iron post.....	397. 683
Corner Ts. 6 and 7 S., Rs. 20 and 21 E., iron post.....	451. 967
Corner Ts. 6 and 7 S., Rs. 21 and 22 E., iron post.....	470. 476

Feet.

Red River, meander corner between sec. 13, T. 7 S., R. 20 E., and sec. 18, T. 7 S., R. 21 E.; iron post on left bank of	375.954
Red River, meander corner between sec. 35, T. 7 S., R. 19 E., and sec. 2, T. 8 S., R. 19 E.; iron post on left bank of	394.841
Corner Ts. 7 and 8 S., Rs. 18 and 19 E., iron post	483.711
Corner Ts. 7 and 8 S., Rs. 17 and 18 E., iron post	414.561

PARIS QUADRANGLE (INDIAN TERRITORY-TEXAS).

The railroad levels were run by Mr. H. C. McCluer. Mr. J. H. Carlock had an independent level party.

FROM GRANT, INDIAN TERRITORY, ALONG THE ST. LOUIS AND SAN FRANCISCO RAILROAD, TO PARIS, TEXAS.

Feet.

Grant, $\frac{1}{4}$ mile south of; red oak 8 inches in diameter, 50 feet right of track, 35 feet south of mile pole 564	463.98
Lenoir; post oak 8 inches in diameter, 40 feet left of track and 350 feet south of mile pole 573	526.319
Paris; spike in telegraph pole, 90 feet east of St. Louis and San Francisco Railroad, and 20 feet south of Texas and Pacific Railway	542.762

FROM BROOKSTON, TEXAS, ALONG THE TEXAS AND PACIFIC RAILWAY, TO HONEY GROVE, TEXAS.

Brookston; spike in mile pole 100	588.023
Petty, $\frac{1}{2}$ mile west of; spike in mile pole 107	636.57
Honey Grove; copper bolt set into bottom step of the approach to First National Bank, corner of Fifth and Market streets	675.221

ALONG TOWNSHIP AND SECTION LINES.

Corner Ts. 6 and 7 S., Rs. 12 and 13 E., iron post	594.912
Corner Ts. 6 and 7 S., Rs. 13 and 14 E., iron post	602.772
Corner Ts. 6 and 7 S., Rs. 14 and 15 E., iron post	534.482
Corner Ts. 6 and 7 S., Rs. 15 and 16 E., iron post	484.372
Corner Ts. 6 and 7 S., Rs. 16 and 17 E., iron post	501.202
Red River, meander corner between sec. 32, T. 7 S., and sec. 5, T. 8 S., R. 17 E.; iron post on left bank of	412.291

BONHAM QUADRANGLE (INDIAN TERRITORY-TEXAS).

Messrs. W. R. Manning and H. C. McCluer ran the railroad levels. Messrs. J. H. Carlock and W. R. Manning had charge of independent level parties. Messrs. H. L. Baker and J. H. Carlock were attached to the subdivision and topographic party of Mr. C. W. Goodlove.

FROM DURANT, ALONG MISSOURI, KANSAS AND TEXAS RAILWAY, TO COLBERT.

Feet.

Durant, $\frac{2}{3}$ mile south of; copper bolt set in second coping stone from the west, 1.7 feet from the north edge and 3.3 feet from the west edge of first coping stone of the north abutment of bridge 430, over the Mineral Bayou	619.292
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	Feet.
Cale, about 2,000 feet north of station; railroad spike in telegraph mile pole 646	694.573
Colbert, about 1,000 feet north of station; railroad spike in telegraph mile pole 653	661.696

FROM WINDOM, TEXAS, ALONG TEXAS AND PACIFIC RAILWAY,
TO BELLS, TEXAS.

Windom; railroad spike in mile pole 117	691.938
Dodd City, about 3,000 feet east of station; railroad spike in bois d'arc tree, 10 inches in diameter, 75 feet right of track and 540 feet west of mile pole 121	645.772
Bonham, 1 mile east of; railroad spike in telegraph pole 180 feet west of mile pole 126	545.606
Ector, 2,500 feet east of station; railroad spike in mile pole 133	661.514
Savoy, 700 feet east of; spike in mile pole 139	673.137
Bells; railroad spike in mile pole 142	677.219

ALONG TOWNSHIP LINES.

Chickasaw-Choctaw boundary line, closing corner Ts. 6 and 7 S., R. 8 E., of the Choctaw survey on the, iron post	717.756
Corner Ts. 6 and 7 S., Rs. 8 and 9 E., iron post	668.435
Corner Ts. 6 and 7 S., Rs. 9 and 10 E., iron post	625.552
Corner Ts. 6 and 7 S., Rs. 10 and 11 E., iron post	565.822
Corner Ts. 6 and 7 S., Rs. 11 and 12 E., iron post	584.062
Chickasaw-Choctaw boundary line, closing corner Ts. 7 and 8 S., R. 8 E., of Chickasaw survey, on the, which is Island Bayou at this point; iron post	619.337
Corner Ts. 8 and 9 S., Rs. 8 and 9 E., iron post	624.766
Corner Ts. 8 and 9 S., Rs. 9 and 10 E., iron post	641.586
Corner Ts. 8 and 9 S., Rs. 10 and 11 E., iron post	494.096

DENISON QUADRANGLE (INDIAN TERRITORY-TEXAS).

The railroad levels were run by Messrs. W. R. Manning, H. C. McCluer, R. T. Carnall, and A. F. Hassan. Mr. J. H. Carlock was attached to the subdivision and topography party of Mr. C. W. Goodlove, which did the Indian Territory portion of the quadrangle, and Mr. A. F. Hassan ran primary and secondary levels for Mr. J. Ahern's topographic party, which worked the Texas portion.

ALONG TOWNSHIP AND SECTION LINES.

	Feet.
Corner Ts. 6 and 7 S., Rs. 3 and 4 E., iron post	662.168
Corner Ts. 6 and 7 S., Rs. 4 and 5 E., iron post	761.047
Corner Ts. 6 and 7 S., Rs. 5 and 6 E., iron post	749.797
Corner Ts. 6 and 7 S., Rs. 6 and 7 E., iron post	583.907
Corner Ts. 6 and 7 S., Rs. 7 and 8 E., iron post	684.317
Corner Ts. 7 and 8 S., Rs. 7 and 8 E., iron post	668.517
Red River, meander corner on, T. 7 S., R. 7 E., sec. 33, and T. 8 S., R. 7 E., sec. 4; on stone	542.117
Red River, meander corner on, between T. 7 S., R. 6 E., sec. 33, and T. 8 S., R. 6 E., sec. 4; on stone	549.631

	Feet.
Corner Ts. 7 and 8 S., Rs. 5 and 6 E., iron post.....	725. 621
Corner Ts. 7 and 8 S., Rs. 4 and 5 E., iron post.....	721. 271
Red River, meander corner on, between T. 7 S., R. 4 E., sec. 33, and T. 8 S., R. 4 E., sec. 4; on stone.....	568. 861
Red River, meander corner on, between T. 7 S., R. 4 E., sec. 7, and T. 7 S., R. 3 E., sec. 12; iron post.....	592. 958
Red River, meander corner on, between T. 7 S., R. 3 E., sec. 34, and T. 8 S., R. 3 E., sec. 3; on stone.....	604. 726
Red River, meander corner on, between T. 8 S., R. 4 E., sec. 12, and T. 8 S., R. 4 E., sec. 7; iron post.....	576. 62
Red River, meander corner on, between T. 8 S., R. 5 E., sec. 25, and T. 8 S., R. 6 E., 8 sec. 30; iron post.....	561. 021
Red River, meander corner on, between T. 8 S., R. 8 E., sec. 31, and T. 9 S., R. 8 E., sec. 6; iron post.....	529. 316

FROM COLBERT, INDIAN TERRITORY, ALONG THE MISSOURI, KAN-
SAS AND TEXAS RAILWAY, TO SHERMAN, TEXAS.

Colbert, Indian Territory, 2 $\frac{3}{4}$ miles south of; copper bolt set in first step of the north abutment of bridge over Red River, No. 451. The bolt is 1.3 feet from the north edge, 1 foot from the south edge, and 0.9 foot from the west edge.....	550. 105
Denison, Texas; bronze tablet set in center of base stone of granite foun- dation of the Ford Building, on left of avenue entrance. The building is situated at corner of Main street and Rusk avenue, and is occupied by the National Bank of Denison and numerous offices.....	735. 831
Cook Spring, Texas, near station; railroad spike in fifth telegraph pole south of mile-pole 666.....	641. 821
Sherman, Texas; bronze tablet set in first course of stone foundation, 5.2 feet from south edge of stone, 5.8 feet from north edge of stone, and on the left side of main entrance to the Fire Department. The building is situated on the corner of Travis and Cherry streets.....	728. 294

FROM CHOCTAW, TEXAS, WEST ALONG TEXAS AND PACIFIC
RAILWAY, TO SOUTHMAYD, TEXAS.

Choctaw, Grayson County, about 1 mile west of; on anchor bolt at north- east corner of shoe of angle brace, on north side of bridge 72, over Choc- taw Creek.....	578. 262
Southmayd, Grayson County, 5 miles east of; iron post set 20 feet and 9 inches south of mile pole 160, and 48 feet and 3 inches south of center of Texas and Pacific track, and 249 feet west of road crossing.....	835. 166
Southmayd, Grayson County; iron post set 9 feet south of mile pole 165, which pole is the fourth one west of station, and is 46 feet south of cen- ter of Texas and Pacific track.....	742. 202

ALONG THE JOINT LINE OF TEXAS AND PACIFIC AND MISSOURI,
KANSAS AND TEXAS RAILROADS.

Collinsville, Grayson County; iron post set 50 feet south of frog of switch, and 5 feet 10 inches east of center of track.....	745. 504
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FROM ETHEL, GRAYSON COUNTY, TEXAS, EAST ALONG COUNTY
ROADS, TO HOWE, GRAYSON COUNTY, TEXAS.

Feet.

Ethel, Grayson County; iron post set in the northeast corner of intersection of roads and on inside of fence.....	723.969
Ethel, Grayson County, about $6\frac{1}{4}$ miles east of; iron post set in northeast corner of intersection of the Sherman and Tioga road with the Sherman and Howe road, on the inside of fence	713.036
Howe, Grayson County, about $6\frac{1}{2}$ miles west of; iron post set inside of fence at northeast corner of intersection of roads at William Chisholm's home.....	816.682
Howe, Grayson County; iron post set 19 feet 6 inches west of center of Houston and Texas Central Railroad and 49 feet 6 inches north of northeast corner of station building	841.264
Howe, Grayson County, about $\frac{1}{2}$ mile south of; lead bolt in stone underneath the triangulation signal at Howe	877.515

ON HOUSTON AND TEXAS CENTRAL RAILROAD.

Sherman, Grayson County, 4 miles south of; copper bolt in lower coping stone west side of south abutment of bridge over Choctaw Creek.....	652.519
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FROM SHERMAN, GRAYSON COUNTY, TEXAS, ALONG COUNTY
ROAD NORTH TO POTTSBORO, GRAYSON COUNTY, TEXAS;
THEN WEST TO DEXTER, COOKE COUNTY, TEXAS; THEN
SOUTH TO WHITESBORO, GRAYSON COUNTY, TEXAS.

Pottsboro, Grayson County, $4\frac{1}{4}$ miles south of; copper bolt in stone underneath triangulation signal "Good"	881.225
Pottsboro, Grayson County, $6\frac{1}{2}$ miles west of; iron post set in southeast corner of Mrs. Carrie Nicholas's front yard and 285 feet north of center of the Pottsboro-Gordonville road.....	714.245
Gordonville, Grayson County; iron post south of Sanderson's drug store, east of post-office, and 33 feet south of center of road, on widow Gordon's place, and nearly south of old well in roadway.....	719.345
Dexter, Cooke County, $\frac{3}{4}$ mile east of; iron post set in front garden of J. F. Evans, at a distance of 62.5 feet south of southwest corner of Evans's house and 63 feet north of center of main road, and about 200 feet west of the county line between Cooke and Grayson counties.....	835.985
Dexter, Cooke County; cross mark cut in the foundation stone at the southwest corner of J. F. Cochran's store. The building is owned by Mrs. T. H. Williams.....	779.515
Dexter, Cooke County, $\frac{1}{2}$ mile north of; copper bolt in stone underneath "Dexter" triangulation station.....	861.8
Dexter, Cooke County, $5\frac{1}{2}$ miles south of; iron post set at turn of road eastward around M. A. Goldston's pasture and about 1,165 feet south of house which is owned by the Carlock heirs and occupied by Mr. Stuckey. Bench mark on inside of fence.....	793.71
County line, Cooke County, $1\frac{1}{2}$ miles west of; copper bolt in stone underneath "County line" triangulation signal.....	882.345
Whitesboro, Grayson County, $3\frac{1}{2}$ miles west of; iron post at intersection of the Dexter road with the Gainesville-Whitesboro road, set in the corner of Dr. Younger's yard and across the road from Nance Prairie school.....	772.215

FROM SOUTHMAYD, GRAYSON COUNTY, TEXAS, SOUTHEAST ON
COUNTY ROAD TO MORMON GROVE, GRAYSON COUNTY, TEXAS,
THEN NORTHEAST TO SHERMAN, TEXAS.

	Feet.
Southmayd, Grayson County, $6\frac{1}{4}$ miles southeast of; iron post about $1\frac{1}{4}$ miles south of Valley Summit School and set in Halliday's field, across the road from Mrs. Keene's pasture. It is about 20 feet east of the center of road and 2 feet north of division fence, while the head of a timbered drain flowing southwest is 600 feet north.....	758. 61
Mormon Grove, Grayson County, 550 feet northeast of; cross mark cut in stone underneath "Mormon Grove" triangulation station. The copper bolt in the stone is about 2 feet under the surface, and was put there by the triangulation party.....	899. 255
Sherman, Grayson County, 3 miles southwest of; iron post set on inside of fence at a turn of the road to the east and directly opposite a gate on the other side of the lane.....	799. 985

ALONG COUNTY ROAD FROM POTTSBORO, GRAYSON COUNTY,
TEXAS, TO MEANDER CORNER ON RED RIVER OF T. 8 S.,
RS. 5 AND 6 E., OF THE CHICKASAW SURVEY.

Fink, Grayson County; iron post set inside of fence, 24 feet north of road to Bounds Ferry and just west of the post-office	708. 715
Fink, Grayson County, 2 miles west of; copper bolt in stone underneath "Fink" triangulation station	837. 92

DENISON, TEXAS.

Iron post at headquarters of the United States Geological Survey, Indian Territory division, on the corner of Texas street and Austin avenue. The post is set in the front yard, near the gate opening on Texas street, the property being known as "The Stuart place"	755. 355
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ALONG THE MISSOURI, KANSAS AND TEXAS RAILWAY, FROM
POTTSBORO, TEXAS, WEST TO WOODBINE, TEXAS.

Pottsboro, Grayson County; bronze tablet set in foundation stone of southwest corner of brick and stone building owned and occupied by J. E. Reeves	765. 919
Steedman, Grayson County; iron post, 1 foot above the surface, 50 feet south of track and 100 feet east of the section house at Steedman. Name of railroad station is Deaver.....	630. 123
Whitesboro, Grayson County; bronze tablet, 3.5 feet above ground and 15 inches from southeast corner on east side of brick school building at Whitesboro	819. 764
Woodbine, Grayson County, 2 miles east of; cross mark cut on southwest end of coping stone on south side of east end bridge over Timber Creek and about 30 feet from mile-pole 691.....	697. 764

GAINESVILLE QUADRANGLE (TEXAS-INDIAN TERRITORY).

The railroad levels were run by Messrs. R. T. Carnall and R. Coe. Mr. J. H. Carlock was attached to the topographic and subdivision party of Mr. C. W. Goodlove, and Mr. R. T. Carnall was with Mr. J. Ahern's party.

GAINESVILLE, TEXAS.

Feet.

Bronze tablet set in center of north face of top foundation stone at northeast corner of brick building on California street, near station building, and used by Tyler & Simpson as a grocery store	733. 159
Iron post, 2 inches out of ground, 45.3 feet south of south crossing frog, and in line with north and south crossing frogs of the Missouri, Kansas and Texas Railway with the Gulf, Colorado and Santa Fe Railway. It is 6.4 feet west of west rail of Missouri, Kansas and Texas and 6.8 feet east of east rail of Gulf, Colorado and Santa Fe	740. 188

FROM GAINESVILLE, TEXAS, ALONG GULF, COLORADO AND SANTA FE RAILWAY TO MARIETTA, INDIAN TERRITORY.

Gainesville, Texas, 6 miles north of; copper bolt set about middle of coping stone on east side of north pier of bridge over Red River	660. 541
Thackerville, Indian Territory, 1 mile north of; railroad spike in first telegraph pole north of mile pole 424	880. 606
Bomer, Indian Territory, railroad spike in telegraph mile pole 428	826. 439
Marietta, Indian Territory, bronze tablet set about the middle of east face of second stone above foundation at northeast corner of two-story stone building owned by S. S. Evans and used by him as a general store....	844. 640

ALONG TOWNSHIP AND SECTION LINES.

Corner Ts. 6 and 7 S., Rs. 2 and 3 W., iron post	921. 010
Corner Ts. 6 and 7 S., Rs. 1 and 2 W., iron post	770. 248
Corner Ts. 6 and 7 S., Rs. 1 W. and 1 E., iron post	917. 328
Corner Ts. 6 and 7 S., Rs. 1 and 2 E., iron post	796. 318
Corner Ts. 6 and 7 S., Rs. 2 and 3 E., iron post	662. 478
Corner Ts. 7 and 8 S., Rs. 2 and 3 E., iron post	737. 336
Corner Ts. 7 and 8 S., Rs. 1 and 2 E., iron post	779. 936
Red River, meander corner on, between sec. 34, T. 7 S., R. 1 E. and sec. 3, T. 8 S., R. 1 E., on stone	670. 696
Red River, meander corner on, between sec. 31, T. 7 S., R. 1 E., and sec. 36, T. 7 S., R. 1 W., on stone	675. 968
Red River, meander corner on, between sec. 36, T. 7 S., R. 1 W., and sec. 1, T. 8 S., R. 1 W., iron post	677. 483
Corner Ts. 7 and 8 S., Rs. 1 and 2 W., iron post	827. 208
Red River, meander corner on, between sec. 31, T. 7 S., R. 2 W., and sec. 6, T. 8 S., R. 2 W., iron post	720. 700
Red River, meander corner on, between sec. 31, T. 7 S., R. 2 W., and sec. 36, T. 7 S., R. 3 W., iron post	722. 500
Red River, meander corner on, between sec. 13, T. 8 S., R. 2 W., and sec. 18, T. 8 S., R. 1 W., iron post	696. 800
Red River, meander corner on, between sec. 34, T. 8 S., R. 1 E., and sec. 3, T. 9 S., R. 1 E., on stone	658. 536
Corner Ts. 8 and 9 S., Rs. 1 and 2 E., iron post	664. 556
Red River, meander corner on, between sec. 34, T. 8 S., R. 2 E., and sec. 3, T. 9 S., R. 2 E., on stone	627. 506
Red River, meander corner on, between sec. 24, T. 8 S., R. 2 E., and sec. 19, T. 8 S., R. 3 E., on stone	612. 286

MONTAGUE QUADRANGLE (TEXAS-INDIAN TERRITORY).

Mr. R. Coe ran the railroad levels. Mr. J. P. Walker was attached to the subdivision and topographic party of Mr. A. D. Morton and Mr. R. Coe to that of Mr. J. Ahern's.

FROM RYAN, ALONG THE CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY, TO TERRAL.

	Feet.
Ryan, 2½ miles south of; a railroad spike in mile pole 513	840. 443
Terral, at north end of siding; railroad spike in mile pole 519	844. 706
Terral, 1 mile south of; a copper bolt in the west end of north pier of bridge 3219 over Red River	808. 837

ALONG TOWNSHIP AND SECTION LINES.

Red River, meander corner on, between sec. 32, T. 6 S., R. 7 W., and sec. 5, T. 7 S., R. 7 W., iron post	814. 696
Corner Ts. 6 and 7 S., Rs. 6 and 7 W., iron post	928. 723
Corner Ts. 6 and 7 S., Rs. 5 and 6 W., iron post	854. 532
Red River, meander corner on, between sec. 35, T. 6 S., R. 5 W., and sec. 2, T. 7 S., R. 5 W., iron post	763. 381
Red River, meander corner on, between sec. 33, T. 6 S., R. 4 W., and sec. 4, T. 7 S., R. 4 W., iron post	749. 0
Corner Ts. 6 and 7 S., Rs. 3 and 4 W., iron post	809. 955
Red River, meander corner on, between sec. 31, T. 7 S., R. 3 W., and sec. 36, T. 7 S., R. 4 W., iron post	730. 9
Red River, meander corner on, between sec. 35, T. 7 S., R. 6 W., and sec. 2, T. 8 S., R. 6 W., iron post	773. 92
Corner Ts. 7 and 8 S., Rs. 6 and 7 W., iron post	887. 629
Red River, meander corner on, between sec. 31, T. 7 S., R. 7 W., and sec. 6, T. 8 S., R. 7 W., iron post	800. 916
Red River, meander corner on, between sec. 18, T. 8 S., R. 6 W., and sec. 13, T. 8 S., R. 7 W., iron post	793. 836

ADDINGTON, RUSH SPRINGS, AND CHICKASHA QUADRANGLES.

The leveling was done by Mr. W. A. Lindsay, under the general direction of Mr. E. M. Douglas.

ALONG NINETY-EIGHTH MERIDIAN, BETWEEN RED AND CANADIAN RIVERS.

	Feet.
Initial point, concrete pier, marked "854"	854. 445
Milepost No. 1, marked "913"	913. 148
Milepost No. 2, marked "927"	926. 937
Milepost No. 3, marked "863"	863. 152
Milepost No. 4, marked "889"	900. 306
Milepost No. 5, marked "933"	933. 402
Milepost No. 6, marked "910"	910. 077
Milepost No. 7, marked "868"	868. 095
Milepost No. 8, marked "882"	881. 942
Milepost No. 9, marked "868"	868. 035
Milepost No. 10, marked "875"	874. 803

	Feet.
Milepost No. 11, marked "883"	882. 747
Milepost No. 12, marked "884"	883. 811
Milepost No. 13, marked "895"	893. 694
Milepost No. 14, marked "897"	897. 435
Milepost No. 15, marked "931"	931. 307
Milepost No. 16, marked "973"	973. 505
Milepost No. 17, marked "979"	979. 186
Milepost No. 18, marked "972"	971. 815
Milepost No. 19, marked "939"	939. 450
Milepost No. 20, marked "945"	945. 447
Milepost No. 21, marked "1007"	1, 007. 407
Milepost No. 22, marked "1017"	1, 017. 701
Milepost No. 23, marked "1034"	1, 034. 313
Milepost No. 24, marked "1034"	1, 033. 938
Milepost No. 25, marked "1054"	1, 054. 209
Milepost No. 26, marked "1075"	1, 075. 657
Milepost No. 27, marked "1074"	1, 074. 173
Milepost No. 28, marked "1070"	1, 070. 598
Milepost No. 29, marked "1127"	1, 127. 602
Milepost No. 30, marked "1135"	1, 135. 599
Milepost No. 31, marked "1143"	1, 143. 029
Milepost No. 32, marked "1121"	1, 121. 527
Milepost No. 33, marked "1104"	1, 103. 753
Milepost No. 34, marked "1137"	1, 137. 530
Milepost No. 35, marked "1144"	1, 144. 152
Milepost No. 36, marked "1147"	1, 147. 096
Milepost No. 37, marked "1170"	1, 169. 849
Milepost No. 38, marked "1211"	1, 211. 093
Milepost No. 39, marked "1213"	1, 212. 849
Milepost No. 40, marked "1206"	1, 206. 236
Milepost No. 41, marked "1151"	1, 151. 08
Milepost No. 42, marked "1196"	1, 195. 923
Milepost No. 43, marked "1204"	1, 203. 528
Milepost No. 44, marked "1237"	1, 236. 832
Milepost No. 45, marked "1269"	1, 269. 383
Closing corner, Ts. 2 and 3 N., R. 8 W., marked "1244"	1, 244. 261
Milepost No. 46, marked "1243"	1, 243. 125
Milepost No. 47, marked "1235"	1, 234. 873
Milepost No. 48, marked "1241"	1, 240. 775
Milepost No. 49, marked "1260"	1, 259. 76
Milepost No. 50, marked "1297"	1, 297. 334
Milepost No. 51, marked "1279"	1, 279. 132
Milepost No. 52, marked "1357"	1, 356. 585
Closing corner, T. 3 N., R. 8 W., marked "1361"	1, 360. 641
Corner, Ts. 3 and 4 N., Rs. 7 and 8 W., marked "1362"	1, 362. 187
Milepost No. 53, marked "1365"	1, 365. 486
Milepost No. 54, marked "1356"	1, 356. 359
Milepost No. 55, marked "1335"	1, 334. 913
Milepost No. 56, marked "1308"	1, 307. 751
Milepost No. 57, marked "1256"	1, 255. 771
Milepost No. 58, marked "1328"	1, 328. 026
Standard corner, T. 5 N., Rs. 7 and 8 W., marked "1333"	1, 332. 686
Closing corner, T. 4 N., Rs. 7 and 8 W., marked "1307"	1, 306. 843

	Feet.
Milepost No. 59, marked "1267"	1, 267. 095
Milepost No. 60, marked "1232"	1, 232. 503
Milepost No. 61, marked "1127"	1, 126. 587
Milepost No. 62, marked "1114"	1, 113. 541
Milepost No. 63, marked "1185"	1, 185. 222
Milepost No. 64, marked "1174"	1, 173. 947
Corner, Ts. 5 and 6 N., Rs. 7 and 8 W., marked "1130"	1, 130. 09
Milepost No. 65, marked "1176"	1, 175. 871
Milepost No. 66, marked "1245"	1, 245. 524
Milepost No. 67, marked "1282"	1, 281. 734
Milepost No. 68, marked "1181"	1, 181. 33
Milepost No. 69, marked "1217"	1, 216. 582
Milepost No. 70, marked "1188"	1, 188. 36
Milepost No. 71, marked "1207"	1, 207. 293
Milepost No. 72, marked "1108"	1, 107. 991
Milepost No. 73, marked "1105"	1, 104. 619
Milepost No. 74, marked "1098"	1, 098. 02
Milepost No. 75, marked "1116"	1, 115. 786
Milepost No. 76, marked "1160"	1, 159. 796
Corner, Ts. 7 and 8 N., Rs. 7 and 8 W., marked "1158"	1, 158. 19
Milepost No. 77, marked "1197"	1, 197. 099
Milepost No. 78, marked "1185"	1, 184. 805
Milepost No. 79, marked "1177"	1, 177. 117
Milepost No. 80, marked "1210"	1, 209. 745
Milepost No. 81, marked "1259"	1, 259. 31
Milepost No. 82, marked "1290"	1, 290. 089
Closing corner, Ts. 8 and 9 N., R. 8 W., fractional, on second standard parallel north, marked "1293"	1, 293. 545
Standard corner, T. 9 N., Rs. 7 and 8 W., marked "1239"	1, 239. 036
Closing corner, T. 8 N., Rs. 7 and 8 W., marked "1234"	1, 233. 829
Milepost No. 83, marked "1293"	1, 292. 959
Milepost No. 84, marked "1294"	1, 294. 479
Milepost No. 85, marked "1307"	1, 307. 274
Milepost No. 86, marked "1357"	1, 356. 956
Milepost No. 87, marked "1411"	1, 410. 591
Milepost No. 88, marked "1327"	1, 327. 309
Corner, Ts. 9 and 10 N., Rs. 7 and 8 W., marked "1408"	1, 408. 496
Milepost No. 98, marked "1301"	1, 300. 578
Milepost No. 90, marked "1366"	1, 366. 462
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Milepost No. 92, marked "1320"	1, 320. 216
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ADVERTISEMENT.

[Bulletin 175.]

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2. Irrigation near Phoenix, Arizona, by Arthur P. Davis. 1897. 8°. 97 pp. 31 pl.
3. Sewage Irrigation, by George W. Rafter. 1897. 8°. 100 pp. 4 pl.
4. A Reconnaissance in Southeastern Washington, by Israel Cook Russell. 1897. 8°. 96 pp. 7 pl.
5. Irrigation Practice on the Great Plains, by Elias Branson Cowgill. 1897. 8°. 39 pp. 12 pl.
6. Underground Waters of Southwestern Kansas, by Erasmuth Haworth. 1897. 8°. 65 pp. 12 pl.
7. Seepage Waters of Northern Utah, by Samuel Fortier. 1897. 8°. 50 pp. 3 pl.
8. Windmills for Irrigation, by E. C. Murphy. 1897. 8°. 49 pp. 8 pl.
9. Irrigation near Greeley, Colorado, by David Boyd. 1897. 8°. 90 pp. 21 pl.
10. Irrigation in Mesilla Valley, New Mexico, by F. C. Barker. 1898. 8°. 51 pp. 11 pl.
11. River Heights for 1896, by Arthur P. Davis. 1897. 8°. 100 pp.
12. Underground Waters of Southeastern Nebraska, by N. H. Darton. 1898. 8°. 56 pp. 21 pl.
13. Irrigation Systems in Texas, by William Ferguson Hutson. 1898. 8°. 67 pp. 10 pl.
14. New Tests of Pumps and Water-Lifts used in Irrigation, by O. P. Hood. 1898. 8°. 91 pp. 1 pl.
15. Operations at River Stations, 1897, Part I. 1898. 8°. 100 pp.
16. Operations at River Stations, 1897, Part II. 1898. 8°. 101-200 pp.
17. Irrigation near Bakersfield, California, by C. E. Grunsky. 1898. 8°. 96 pp. 16 pl.
18. Irrigation near Fresno, California, by C. E. Grunsky. 1898. 8°. 94 pp. 14 pl.
19. Irrigation near Merced, California, by C. E. Grunsky. 1899. 8°. 59 pp. 11 pl.

20. Experiments with Windmills, by T. O. Perry. 1899. 8°. 97 pp. 12 pl.
21. Wells of Northern Indiana, by Frank Leverett. 1899. 8°. 82 pp. 2 pl.
22. Sewage Irrigation, Part II, by George W. Rafter. 1899. 8°. 100 pp. 7 pl.
23. Water-right Problems of the Bighorn Mountains, by Elwood Mead. 1899. 8°. 62 pp. 7 pl.
24. Water Resources of the State of New York, Part I, by G. W. Rafter. 1899. 8°. 99 pp. 13 pl.
25. Water Resources of the State of New York, Part II, by G. W. Rafter. 1899. 8°. 101-200 pp. 12 pl.
26. Wells of Southern Indiana (Continuation of No. 21), by Frank Leverett. 1899. 8°. 64 pp.
27. Operations at River Stations for 1898, Part I. 1899. 8°. 100 pp.
28. Operations at River Stations for 1898, Part II. 1899. 8°. 101-200 pp.
29. Wells and Windmills in Nebraska, by Erwin H. Barbour. 1899. 8°. 85 pp. 27 pl.
30. Water Resources of the Lower Peninsula of Michigan, by Alfred C. Lane. 1899. 8°. 97 pp. 7 pl.
31. Lower Michigan Mineral Waters, by Alfred C. Lane. 1899. 8°. 97 pp. 4 pl.
32. Water Resources of Puerto Rico, by Herbert M. Wilson. 1899. 8°. 48 pp. 17 pl.
33. Storage of Water on Gila River, Arizona, by Joseph B. Lippincott. 1900. 8°. 98 pp. 33 pl.
34. Geology and Water Resources of SE. South Dakota, by J. E. Todd. 1900. 8°. 34 pp. 19 pl.
35. Operations at River Stations, 1899, Part I. 1900. 8°. 100 pp.
36. Operations at River Stations, 1899, Part II. 1900. 8°. 101-198 pp.
37. Operations at River Stations, 1899, Part III. 1900. 8°. 199-298 pp.
38. Operations at River Stations, 1899, Part IV. 1900. 8°. 299-396 pp.
39. Operations at River Stations, 1899, Part V. 1900. 8°. 397-471 pp.

TOPOGRAPHIC MAP OF THE UNITED STATES.

When, in 1882, the Geological Survey was directed by law to make a geologic map of the United States, there was in existence no suitable topographic map to serve as a base for the geologic map. The preparation of such a topographic map was therefore immediately begun. About one-fifth of the area of the country, excluding Alaska, has now been thus mapped. The map is published in atlas sheets, each sheet representing a small quadrangular district, as explained under the next heading. The separate sheets are sold at 5 cents each when fewer than 100 copies are purchased, but when they are ordered in lots of 100 or more copies, whether of the same sheet or of different sheets, the price is 2 cents each. The mapped areas are widely scattered, nearly every State being represented. About 900 sheets have been engraved and printed; they are tabulated by States in the Survey's "List of Publications," a pamphlet which may be had on application.

The map sheets represent a great variety of topographic features, and with the aid of descriptive text they can be used to illustrate topographic forms. This has led to the projection of an educational series of topographic folios, for use wherever geography is taught in high schools, academies, and colleges. Of this series the first two folios have been issued, viz:

1. Physiographic types, by Henry Gannett, 1898, folio, consisting of the following sheets and 4 pages of descriptive text: Fargo (N. Dak.-Minn.), a region in youth; Charleston (W. Va.), a region in maturity; Caldwell (Kans.), a region in old age; Palmyra (Va.), a rejuvenated region; Mount Shasta, (Cal.), a young volcanic mountain; Eagle (Wis.), moraines; Sun Prairie (Wis.), drumlins; Donaldsonville (La.), river flood plains; Boothbay (Me.), a fiord coast; Atlantic City (N. J.), a barrier-beach coast.

2. Physiographic types, by Henry Gannett, 1900, folio, consisting of the following sheets and 11 pages of descriptive text: Norfolk (Va.-N. C.), a coast swamp; Marshall (Mo.), a graded river; Lexington (Nebr.), an overloaded stream; Harrisburg (Pa.), Appalachian ridges; Poteau Mountain (Ark.-Ind. T.), Ozark ridges; Marshall (Ark.), Ozark Plateau; West Denver (Colo.), hogbacks; Mount Taylor (N. Mex.), volcanic peaks, plateaus, and necks; Cucamonga (Cal.), alluvial cones; Crater Lake special (Oreg.), a crater.

GEOLOGIC ATLAS OF THE UNITED STATES.

The Geologic Atlas of the United States is the final form of publication of the topographic and geologic maps. The atlas is issued in parts, or folios, progressively as the surveys are extended, and is designed ultimately to cover the entire country.

Under the plan adopted the entire area of the country is divided into small rectangular districts (designated *quadrangles*), bounded by certain meridians and parallels. The unit of survey is also the unit of publication, and the maps and descriptions of each rectangular district are issued as a folio of the Geologic Atlas.

Each folio contains topographic, geologic, economic, and structural maps, together with textual descriptions and explanations, and is designated by the name of a principal town or of a prominent natural feature within the district.

Two forms of issue have been adopted, a "library edition" and a "field edition." In both the sheets are bound between heavy paper covers, but the library copies are permanently bound, while the sheets and covers of the field copies are only temporarily wired together.

Under the law a copy of each folio is sent to certain public libraries and educational institutions. The remainder are sold at 25 cents each, except such as contain an unusual amount of matter, which are priced accordingly. Prepayment is obligatory. The folios ready for distribution are here listed:

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
1	Livingston	Montana..	110°-111°	45°-46°	3,354	25
2	Ringgold	Georgia..	85°-85° 30'	34° 30'-35°	980	25
3	Placerville	Tennessee }	120° 30'-121°	38° 30'-39°	932	25
4	Kingstonsa	Tennessee }	84° 30'-85°	35° 30'-36°	969	25
5	Sacramento	California.	121°-121° 30'	38° 30'-39°	932	25
6	Chattanooga	Tennessee }	85°-85° 30'	35°-35° 30'	975	25
7	Pikes Peak a	Colorado..	105°-105° 30'	38° 30'-39°	932	25
8	Sewanee	Tennessee }	85° 30'-86°	35°-35° 30'	975	25
9	Anthracite-Crest- ed Butte.	Colorado..	106° 45'-107° 15'	38° 45'-39°	465	50
10	Harpers Ferry...	Virginia..	77° 30'-78°	39°-39° 30'	925	25
11	Jackson	Maryland. }	120° 30'-121°	38°-38° 30'	938	25
12	Estillville	California. }	82° 30'-83°	36° 30'-37°	957	25
13	Fredericksburg..	Virginia..	77°-77° 30'	38°-38° 30'	938	25
14	Staunton	West Va.. }	79°-79° 30'	38°-38° 30'	938	25
15	Lassen Peak	California.	121°-122°	40°-41°	3,634	25
16	Knoxville	Tennessee }	83° 30'-84°	35° 30'-36°	925	25
17	Marysville	N. Carolina }	121° 30'-122°	39°-39° 30'	925	25
18	Smartsville	California.	121°-121° 30'	39°-39° 30'	925	25
19	Stevenson	Alabama..	85° 30'-86°	34° 30'-35°	980	25
20	Cleveland	Tennessee }	84° 30'-85°	35°-35° 30'	975	25
21	Pikeville	Tennessee }	85°-85° 30'	35° 30'-36°	969	25
22	McMinnville	Tennessee }	85° 30'-86°	35° 30'-36°	969	25
23	Nomini	Maryland. }	76° 30'-77°	38°-38° 30'	938	25
24	Three Forks	Virginia.. }	111°-112°	45°-46°	3,354	50
25	Loudon	Montana.. }	84°-84° 30'	35° 30'-36°	969	25
26	Pocahontas	Tennessee }	81°-81° 30'	37°-37° 30'	951	25
27	Morristown	West Va.. }	83°-83° 30'	37°-37° 30'	963	25
28	Piedmont	Tennessee }	79°-79° 30'	39°-39° 30'	925	25
29	Nevada City:	Maryland. }	79°-79° 30'	39°-39° 30'	925	25
	Nevada City.	West Va.. }	79°-79° 30'	39°-39° 30'	925	25
	Grass Valley.	California.	121° 00' 25"-121° 03' 45"	39° 13' 50"-39° 17' 16"	11.65	50
	Banner Hill.	California.	121° 01' 35"-121° 05' 04"	39° 10' 22"-39° 13' 50"	12.09	
	Yellowstone National Park:	California.	120° 57' 05"-121° 00' 25"	39° 13' 50"-39° 17' 16"	11.65	
30	Gallatin.....	Wyoming..	110°-111°	44°-45°	3,412	75
	Canyon.....	Wyoming..	110°-111°	44°-45°	3,412	75
	Shoshone.....	Wyoming..	110°-111°	44°-45°	3,412	75
	Lake.....	Wyoming..	110°-111°	44°-45°	3,412	75
31	Pyramid Peak	California.	120°-120° 30'	38° 30'-39°	932	25
32	Franklin	Virginia.. }	79°-79° 30'	38° 30'-39°	932	25
33	Briceville	West Va.. }	84°-84° 30'	36°-36° 30'	963	25
34	Buckhannon	Tennessee }	80°-80° 30'	38° 30'-39°	932	25
35	Gadsden	West Va.. }	86°-86° 30'	34°-34° 30'	986	25
36	Pueblo	Alabama.. }	104° 30'-105°	38°-38° 30'	938	50
37	Downieville	Colorado.. }	120° 30'-121°	38° 30'-40°	919	25
38	Butte Special	California.	120° 30'-121°	38° 30'-40°	919	25
39	Truckee	Montana.. }	112° 29' 30"-112° 36' 42"	45° 59' 28"-46° 02' 54"	22.80	50
40	Wartburg	California.	120°-120° 30'	39°-39° 30'	925	25
41	Sonora	Tennessee }	84° 30'-85°	36°-36° 30'	963	25
42	Nueces	California.	120°-120° 30'	37° 30'-38°	944	25
43	Bidwell Bar	Texas	100°-100° 30'	29° 30'-30°	1,035	25
44	Tazewell	California.	121°-121° 30'	39° 30'-40°	918	25
45	Boise	Virginia.. }	81° 30'-82°	37°-37° 30'	950	25
46	Richmond	West Va.. }	81° 30'-82°	37°-37° 30'	950	25
47	London	Idaho..... }	116°-116° 30'	43° 30'-44°	864	25
48	Tennile District Special.	Richmond. }	84°-84° 30'	37° 30'-38°	944	25
49	Roseburg	Kentucky }	84°-84° 30'	37°-37° 30'	950	25
50	Holyoke	Tennessee }	106° 8'-106° 16'	39° 22' 30"-39° 30' 30"	55	25
51	Big Trees	Oregon	123°-123° 30'	43°-43° 30'	871	25
52	Absaroka:	Mass	72° 30'-73°	42°-42° 30'	885	50
	Crandall.....	Conn	72° 30'-73°	42°-42° 30'	885	50
	Ishawooa.....	California.	120°-120° 30'	38°-38° 30'	938	25
53	Standingstone....	Wyoming..	109° 30'-110°	44°-44° 30'	1,706	25
		Tennessee }	85°-85° 30'	36°-36° 30'	963	25

a Out of stock.

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
54	Tacoma.....	Washington.	122°-122° 30'	47°-47° 30'	812	25
55	Fort Benton	Montana..	110°-111°	47°-48°	3, 273	25
56	Little Belt Mts	Montana..	110°-111°	46°-47°	3, 295	25
57	Telluride	Colorado..	107° 45'-108°	37° 45'-38°	236	25
58	Elmoro	Colorado..	104°-104° 30'	37°-37° 30'	950	25
59	Bristol.....	Virginia. } Tennessee }	82°-82° 30'	36° 30'-37°	957	25
61	Monterey.....	Virginia. } West Va. }	79° 30'-80°	38°-38° 30'	938	25
62	Menominee Special	Michigan.	87° 44'-88° 09'	45° 44'-45° 55'	254	25

STATISTICAL PAPERS.

Mineral Resources of the United States, 1882, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1883 and 1884, by Albert Williams, jr. 1885. 8°. xiv, 1016 pp. Price 60 cents.

Mineral Resources of the United States, 1885. Division of Mining Statistics and Technology. 1886. 8°. vii, 576 pp. Price 40 cents.

Mineral Resources of the United States, 1886, by David T. Day. 1887. 8°. viii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1887, by David T. Day. 1888. 8°. vii, 832 pp. Price 50 cents.

Mineral Resources of the United States, 1888, by David T. Day. 1890. 8°. vii, 652 pp. Price 50 cents.

Mineral Resources of the United States, 1889 and 1890, by David T. Day. 1892. 8°. viii, 671 pp. Price 50 cents.

Mineral Resources of the United States, 1891, by David T. Day. 1893. 8°. vii, 630 pp. Price 50 cents.

Mineral Resources of the United States, 1892, by David T. Day. 1893. 8°. vii, 850 pp. Price 50 cents.

Mineral Resources of the United States, 1893, by David T. Day. 1894. 8°. viii, 810 pp. Price 50 cents.

On March 2, 1895, the following provision was included in an act of Congress:

"Provided, That hereafter the report of the mineral resources of the United States shall be issued as a part of the report of the Director of the Geological Survey."

In compliance with this legislation the following reports have been published:

Mineral Resources of the United States, 1894, David T. Day, Chief of Division. 1895. 8°. xv, 646 pp., 23 pl.; xix, 735 pp., 6 pl. Being Parts III and IV of the Sixteenth Annual Report.

Mineral Resources of the United States, 1895, David T. Day, Chief of Division. 1896. 8°. xxiii, 542 pp., 8 pl. and maps; iii, 543-1058 pp., 9-13 pl. Being Part III (in 2 vols.) of the Seventeenth Annual Report.

Mineral Resources of the United States, 1896, David T. Day, Chief of Division. 1897. 8°. xii, 642 pp., 1 pl.; 643-1400 pp. Being Part V (in 2 vols.) of the Eighteenth Annual Report.

Mineral Resources of the United States, 1897, David T. Day, Chief of Division. 1898. 8°. viii, 651 pp., 11 pl.; viii, 706 pp. Being Part VI (in 2 vols.) of the Nineteenth Annual Report.

Mineral Resources of the United States, 1898, by David T. Day, Chief of Division. 1899. 8°. viii, 616 pp.; ix, 804 pp., 1 pl. Being Part VI (in 2 vols.) of the Twentieth Annual Report.

The money received from the sale of the Survey publications is deposited in the Treasury, and the Secretary of the Treasury declines to receive bank checks, drafts, or postage stamps; all remittances, therefore, must be by MONEY ORDER, made payable to the Director of the United States Geological Survey, or in CURRENCY—the exact amount. Correspondence relating to the publications of the Survey should be addressed to—

THE DIRECTOR,

UNITED STATES GEOLOGICAL SURVEY,

WASHINGTON. D. C.

WASHINGTON, D. C., September, 1900.

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Author.

Fitch (C. H.).
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